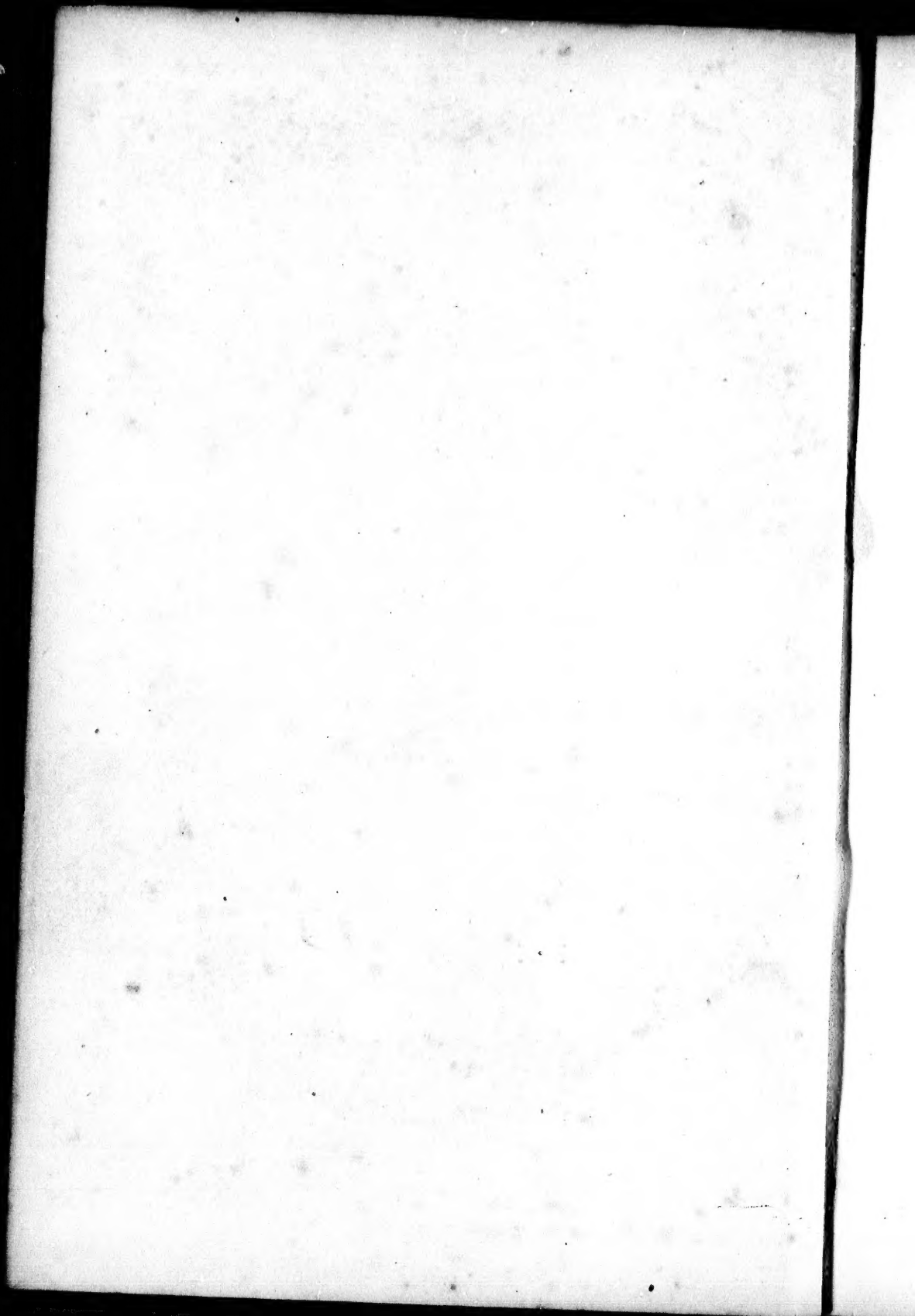




THE
ARCHITECTURE OF THE HEAVENS:

CONTAINING

A NEW THEORY OF THE UNIVERSE AND THE
EXTENT OF THE DELUGE,

AND

THE TESTIMONY OF THE BIBLE AND GEOLOGY

IN OPPOSITION TO THE

VIEWS OF DR. COLENSO.

BY

EZEKIEL S. WIGGINS.

.....
Ask now the beasts of the earth, and they shall teach thee;
And the fowls of the air, and they shall tell thee:
Or speak to the earth, and it shall teach thee;
And the fishes of the sea shall declare unto thee.—JOB.
.....

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P R E F A C E.

HAVING for some time entertained the opinion that there are points in connection with Science and Revelation that have been either neglected or overlooked by authors in all ages, and which are of no little consequence in the present state of affairs with regard to the sceptical aspect of the times, I have thought it necessary to prepare this little work for the press, trusting that it contains something interesting and formidable to the doctrine of the sceptic and the infidel. It was the intention at the commencement to take up the peculiar points so valiantly set forth by Colenso, and to give to the Canadian the substance of his discourse and the weight of his arguments, but our limits would not permit; and long ere the completion of the present volume, the Bishop had opponents in the field that handled the weapons of defence with greater ability and wisdom than could be expected from an humbler source. It is not my expectation that all my readers will fall in with my views in reference to the nature of the comets, the origin of the planets, and the character of the change anticipated to take place in the Solar System; however, we live in an age when 'opinion' is unconnected with the flame of the fagot or the axe of decapitation, and therefore we are at perfect liberty to weigh our own ideas upon our own scales. All that is asked is an honest *critical inquiry*. The assertion of the Geologist that the Noachian Deluge was but a common event in his extensive history of bygone ages,

has been and still is, to the reader of the Bible, anything but satisfactory, and hence it was thought necessary to oppose a current that bears along upon its bosom the bark of infidel principles. The reader, however, will find no trace of a shade cast upon Geology itself, but only upon its *interpretation*. Colenso's texts of Scripture, which he represents as clashing, have also been duly considered, but not without apprehensions that the Bishop has raised an excitement more particularly for secular advantage than love for the universality of Truth. I have been careful to avoid *sectarianism* as much as possible; and what I have said of the doctrine of the Trinity, I have said with a clear conscience; still my indefinite language in general upon that subject is owing to my mind being as yet not fully made up. I have not yet studied it sufficiently to warrant a belief; and therefore the reader has no space to judge whether I do or do not deny that doctrine.

To the following gentlemen I have to return my sincere thanks for their encouragement when I have been more than once disheartened, and for their hearty assistance in the publication: ELD. JESSE TATTON, F. MORGAN, Esq., J. L. WHITESIDE, Esq., J. BROAD, Esq.

To all others who have kindly assisted, I return my sincere thanks, trusting that my endeavors will be attended in a measure with success, and therefore that my labor will not be in vain.

E. S. WIGGINS.

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ARCHITECTURE OF THE HEAVENS.

CHAPTER I.

THE PROGRESS OF ASTRONOMY.

THE science which treats of the heavenly bodies was the first that dawned upon the human mind after the Fall. The very presence of the nocturnal train, steadily emerging into view, as the orb of day withdrew his beams, would be a sufficient stimulus to awaken admiration, arrest the attention, and inspire the inquiry. Adam doubtless gazed from his "blissful bower" upon the starry firmament,

"Filled with admiration and deep muse."

The antediluvians, in all probability, paid some attention to the appearance and movements of the celestial bodies. Their knowledge however could not have been otherwise than exceedingly limited, and perhaps strongly blended with superstition. Eusebius from Eupolemius informs us that the Babylonians acknowledged Enoch as the inventor of astrology, and that he received his superior knowledge by the ministry of an angel. That such a messenger may have attended him may appear somewhat incredible, and the more so as we reflect upon the term *astrology*; yet the Rev. John Wesley apparently assented to the historical tale that the wise Socrates was visited by a demon (a knowing one), an angel, at the morning's dawn, who informed him of any evil that would befall him

through the day. Josephus, in assigning his reasons why the antediluvians attained to such extreme longevity, adds, that "God afforded them a longer time on account of their virtue, and the good use they made of it in astronomical and geometrical discoveries, which would not have afforded the time of foretelling (the periods of the stars), unless they had lived six hundred years." It cannot be said that these statements are wholly void of truth, as we are provided with nothing to show in favor or against them. Their knowledge might have been ever so extensive, and yet never transmitted to us either by historical accounts or by tradition. If any of their writings had struggled with the various migrations of the Hebrews, they likely lodged—where Mahomet's head should have been—in the Alexandrian flames. It is worthy of remark, that it has been and still is held by some that Enoch was the author of a book from which the apostle Jude cites a passage (14, 15). Tertullian speaks of it in several places in the highest mood, and argues that it was preserved by Noah in the ark. Fragments of it have been brought into Europe from Abyssinia by Mr. Bruce and other African travellers, and parts of it have been translated and published.*

Superstition was the chief feature of the ancient character, and reigned in the heart of Hebrew and heathen. We would expect, therefore, and we are not disappointed to find, all their astronomical knowledge shrouded in mystic error. But no matter how palpable the mental darkness, "the twinkling taper" seems ever to waken an anxious emotion, and grapple with the mind. Among the ignorant African savages of the

* Justin, Athenagoras, Irenæus, Clemens Alexandrinus, Lactantius and some others borrowed from this book an opinion that the angels had connection with the daughters of men, of whom they had offspring, who "became mighty men which were of old, men of renown."

present day there are those who, though entirely destitute of nearly all mental endowment, take a lively interest in the observation of the stars. The appearance of some particular stars, the Rev. Mr. Campbell tells us in his "African Light," are signs that some particular roots are ripe which grow in different parts, where they immediately repair to dig them.

The earliest accounts we have of astronomical inquiries are those of Babylon, two thousand years before the Christian era. Josephus informs us that about that time Abraham taught astronomy to the Egyptians. It was much advanced in Chaldea under the reign of Nabonassar; and at Babylon, lunar eclipses were calculated with very great accuracy B. C. 720. It is said that the Chinese were acquainted with astronomy eleven centuries before the Christian era, and some say still earlier by several centuries. "The Royal Library at Paris contains a Chinese chart of the heavens in which 1460 stars are correctly inserted," which was made six centuries before Christ. Job, Hesiod, and Homer mention several of the constellations. But the knowledge of this science was imperfect and confused till more philosophically treated by the enterprising Greeks, being confined to the Mazzaroth, the classification of stars into constellations and the observation of eclipses. The doctrine of the sun and planets forming a distinct and complete system it does not appear was broached till a few centuries before the Christian era, though some bungled opinions were very strenuously maintained, as, for instance, the theory of Hicetas of Syracuse, who taught (B. C. 1201) that the sun and stars were fixed, and that the earth moved round them. But the grand key which unlocked the true theory of the universe—the rotundity of the earth—was finally discovered by Thales of Miletus. It does not appear that the idea was advanced previously, though it may possibly be hinted at in

Job 26 : 7, where it is said that God "hangeth the earth upon nothing." The wise Thales also taught the opacity of the moon, and the true cause of lunar eclipses, which were formerly thought to be the effect of magic. The dungeon of ignorance being to some extent lighted by Thales' discoveries, the way was opened for a greater field of investigation. Pythagoras, taking advantage of his promulgations, afterwards taught the doctrine of celestial motions and the plurality of habitable worlds ; and Plato subsequently taught the possibility of existing antipodes : thus the greatest principle in astronomy was now established. After him Ptolemy, an Egyptian philosopher, who flourished about 140 years after Christ, calculated the distances of some of the planets, yet differing widely from the true system of Pythagoras. But though there were in those ages minds of magnanimity and brilliance, which unrolled to the unthinking world the map of the heavens, the entire human race were so deeply prejudiced and engrossed in ignorance, that their philosophical endeavors served rather to annoy and exasperate than to convince or interest. Even in the renowned age of " the seven sages," and many centuries after their investigations, the world at large still continued to maintain that the earth was a vast plain founded upon the waters. This was also the opinion of the ancient Hebrews, and in all probability first arose from the Mosaic narrative of " the third day," Gen. 1 : 9. The Psalmist, it appears, had no loftier or more scientific idea. His words are : " To him that stretcheth out the earth above the waters " (referring to the third day). Psalm 136 : 6. " For he hath founded it upon the seas, and established it upon the floods." Psalm 24 : 2. Even in the age of Solomon it was the vulgar belief that not only the abyss—the sea and the waters—supported the earth, but that under these the giants—the Rephaim—were groaning and

suffering the punishment of their iniquities. It may have been from a tradition of this belief that some savages suppose that the earth is supported upon the shoulders of a giant.* If Solomon was a naturalist he was no astronomer, nor does it appear that he paid any attention, not even as much as David his father, to the larger fields of contemplation. It was the current opinion in his day, as it was for many centuries after, that the sun was a mass of fire, that at his setting, or as the Greeks had it, *sinking into the lap of Thetis*, he plunged unextinguished into the western waters, struggled through "the abyss," and "again rejoiced as a strong man to run a race." Such ideas, so incredible and void of reason, are truly greater testimonies of the reign of superstition and ignorance than even idolatrous worship; for while reason itself would dispute the former, there is nothing in the wide domain of Nature, without the reflection of Biblical light, that would point out comprehensively a merciful and loving Deity. Nature, it is true, exhibits many lessons that teach of wisdom and power, many arguments that assure of a supernatural ruler, yet there is nothing in its unaided volume that would certify that love and mercy are among the prominent attributes of God. Indeed the life of man being a scene of hardship, opposition, and disappointment, the ignorant savage would be inclined to believe the reverse. Hence we find that even devils have been the objects of heathen worship for the long space of three thousand years (See Lev. 17 : 7, Deut. 32 : 17, Ps. 106 : 37), and are still worshipped by the natives of the interior of Africa, and the Cingalese.

* The ancient Scandinavians believed that the earth was supported by a great ash-tree with three mighty roots, and that its branches towered to the highest heavens, and bore the stars as its fruit.

Science, like the Christian religion and every other good, has been opposed and persecuted, especially that branch which reveals the true theory of the universe, still it has struggled on over the mossy ruins of time, and now shines in all its beauty and splendor. Its opposition* was chiefly the promptings of ignorance mingled with fanaticism among both heathens and professing Christians. The priests themselves taught that the temple of Apollo at Delphos was the centre of the world, and condemned the person who disputed it, evidently to show, if possible, some noble feature in their religion ; and the term Mediterranean, applied to that beautiful sea on the south of Europe, amply proves the continuation of this superstitious belief. In fact from the earliest times till the era of the Reformation, the most prominent persons were the greatest enemies to philosophical inquiry, and ever sought to check its progress by persecution. Aristarchus of Samos, about 300 years B. C., having maintained that the earth turned upon its axis and revolved round the sun, had nearly sacrificed his life to his theory ; and in the eighth century A. D., Boniface, Archbishop of Mentz, and legate of Pope Zachery, actually denounced a bishop as a heretic for maintaining the doctrine of Plato, that terrestrial antipodes existed. But the Greek philosophy, it cannot be doubted, was in the later ages deemed chimerical and fanatical, in a great measure through its legendary connections with the heathen deities. The eager Christian, especially those of that class who have but the name, is ever anxious either violently or otherwise, generally in the former way, to put down the doctrine of the eager heathen ; hence we

*Even the wise Socrates held that men could not possibly attain to any certain knowledge respecting the form or motions of the earth or the mechanism of the heavens.

may in some measure account for the severity of Rome against the revival of heathen promulgations. The genuine truth, which the Greek philosophers themselves advanced, was so involved in superstitious obscurity that it was and still is difficult, and in some points impossible, to separate it from the fabulous tales with which it is interwoven. The sage as well as the ignorant barbarian had affected to believe that the celestial bodies were but the productions of their heathen deities, some of which were but their poets and heroes deified. They speak of the Galaxy or Milky Way as the highway by which their heroes went to heaven, and was taught to have originated in this wise:—the Goddess Juno, the wife of Jupiter, having accidentally given suck to the infant Mercury or Hercules, who, while she reposed, was laid at her side; but on awakening and perceiving who he was, she thrust him violently from her, and the heavens became stained by the wasted milk. This was for many ages believed, though disputed by Democritus, who held that it consisted of nothing more than a confused assemblage of stars. Indeed, they continued to credit fiction even more degraded, as, for instance, the birth of Minerva from the brain of Jupiter, the deception of Ops in giving Saturn a stone to devour instead of her infant son, when the god did not perceive the difference, and a host of other nonsense, useless to mention. They likewise believed that the Mediterranean sea had no connection with the ocean till Hercules forced a passage through the rocky confines forming the straits of Gibraltar—hence the pillars of Hercules. Pythagoras, though he taught the universe in the light now received, yet maintained that it consisted of but twelve spheres.* He

* These twelve spheres were: the sphere of the earth, the sphere of the waters, the sphere of the air, the sphere of fire, the spheres of the

also taught that the motions of these produced a delightful, yet inaudible, music, which he styled the music of the spheres. Copernicus, of Thorn, in Polish Prussia, revived in the sixteenth century the theory of this great philosopher, either by its plausibility or his own discoveries. From that period till the present day, after a desperate struggle with the Italian Inquisition, the science of astronomy, instead of waning, as it did so many centuries after its first ray of true light beamed in upon the mind, has been gradually advancing and improving. It is now generally received upon the theory of the Copernican system, which is too far advanced to halt at denial, that our earth is one among a number of planets which with the central sphere form a distinct and complete system. How many worlds belong to the solar system has not yet and perhaps never will be ascertained; indeed every few years add a new planet to the number before known to the astronomer. As many as forty-five have been discovered since the year 1806. Since the invention of the telescope by Galileo, which he first directed towards the nearest planet, the moon, the works of the Creator have more than ever hushed the mind in awe. In the field of its deep gazing eye, innumerable worlds, floating in the far off regions of space, are revealed to the human gaze. Worlds upon worlds are seen revolving far beyond the track of our remotest planet—star is seen glistening to star, system to system. Dr. Herschel affirms that he saw no less than 116,000 stars pass over the field of his telescope in fifteen minutes, when directed towards the Milky Way. How astounding is the extent of the universe and the number of the stars! As there are no bounds to the wide abyss

moon, sun, Venus, Mercury, Mars, Jupiter, Saturn, and the sphere of the stars.

of immensity, so it appears there is no limit to the universe. Probably "as far as angels' ken," systems appear, stars glisten, and spheres revolve. Those systems, however, are not necessarily similar to ours. It is my humble opinion that the solar system differs from all others within the wide circle of immensity. The distant stars, it is true, may with propriety be styled *suns*, but the adjunct of *other systems* is not philosophically admissible. Because our sun has opaque worlds playing round him, it does not follow that this is the case with all luminaries. In fact it occurs very plainly from astronomical observations that there are primary stars,* round which other stars revolve. On account of the immense distance, this, of course, is not visibly demonstrable, still some of them have been frequently observed to change their relative position to others.† "To some minds," says Dr. Dick, "not accustomed to deep reflection, it may appear a very trivial fact to behold a small and scarcely distinguishable point of light immediately adjacent to a larger star, and to be informed that this lucid point revolves round its larger attendant; but this phenomenon, minute and trivial as it may at first sight appear, proclaims the astonishing fact that *suns revolve around suns and systems around systems.*" But there

* Dr. Herschel says, that several of the fixed stars revolve on their axes.

† To mention one more instance among many (referring to previous statements) β . Lyræ was discovered by Mr. Goodrich to be subject to a periodic variation. It completes all its phases in 12 days, 19 hours, during which time it undergoes the following changes: 1. It is of the third magnitude for about two days. 2. It diminishes in about 1½ day. 3. It is between the fourth and fifth magnitudes for less than a day. 4. It increases in about two days. 5. It is of the third magnitude for about three days. 6. It diminishes in about one day. 7. It is something larger than the fourth magnitude for a little less than a day. 8. It increases in about one day and three quarters to the first point, and so completes a whole period."—Guy's Astronomy.

may be primary stars round which no secondaries revolve. Doubtless there was once a time, if I may so express myself, when no planet frolicked round our sun. But why should our system differ so widely from all others? We make this reply. Our system during the geologic ages, and prior to the fourth day of the Mosaic creation, was a starry system, *i. e.*, our planets were then *stars*, or in other words were surrounded with *luminous atmospheres*. This is heaven's order! On the fourth day the Creator, designing that man should appear upon the stage, who should view His handiwork, and ponder upon the stars of heaven, and hence be excited "to admire and to adore," drew back the intervening luminous curtain not only from our terraqueous orb, but from all the other planets of the solar system, and probably returned them to the sun, the place, as will be afterwards shewn, from whence they came.

It is truly wonderful how arduous have been the labors of man in surveying the works of God. How diligently has the astronomer continued to direct his glasses over the wide chambers of heaven, mayhap that some wandering star or world before unseen might burst in view. Man is ever trying to raise, and look in behind the curtain of mystery; and yet the more he discovers, the more he views, and the more he ponders, the nearer he sees himself to the threshold of nonentity. We can now not only take the gauge of our terrestrial mountains, and hover the scrutinizing eye over the crater of Tycho, but we can apply the line of calculation, and measure the distances of the planets and some of the stars; and more than that,—we can place some of those ponderous spheres upon the scales of inquiry, and ascertain their weight. We can also weigh the earth* beneath our feet,

* Mr. Bailey, the President of the London Astronomical Society, has

and employ means no more wonderful and scientific than the school-boy's simple "rule of three." Our earth's distance from the sun is calculated by the transit of Venus over his disc. This was first noticed by Mr. Horrox, and occurs only twice in about 120 years. There is however, I would mention, (providing I am not in error) another method which is independent of this phenomenon, and requires only the distance of the moon from our planet. By knowing this distance, the mean of which is given, 240,000 miles, we can, by a trigonometrical process, find the distance of the earth from the sun, or the moon from the sun: suppose we have the true distance, and that the lunar sphere is in that part of her orbit when she appears to be half lighted. Then are not the centres of the sun and moon, and the feet of the observer at the vertices of a right-angled triangle, the right-angle being at the moon? Now by determining with a quadrant the angle formed by the imaginary lines drawn from the earth's surface, respectively to the centres of the sun and our satellite, we have two angles (the right angle at the moon, and the obtained angle), and a side (the actual distance from the earth to the moon), which is sufficient data to ascertain the distances of the earth and moon respectively from the solar sphere.

The origin of our earth has in all ages been a subject of reasoning in the mind. It is natural for man, when effect is seen, to trace out the cause: hence the heathen, ranging as far back as the unaided mind could venture, attributed it as

been for six years weighing the earth in a number of ways, and is certain that he has obtained its specific gravity so nearly accurate that his figures cannot err more than 0.0058. He places it at 5.6747. The total weight of the world in gross tons of 2,240 pounds is 6,062,165,592,211,410,488,889 (tons), according to his calculation.

the creation of their deities. Others, if possible even more superstitious,* imagined that it sprang from the Orphic egg, which they supposed bursted and produced all things. This notion however, it is by some supposed, originated in some abstruse tradition of "The Spirit of God moving (or brooding) upon the surface of the waters." Gen. 1: 2. Few if any of the ancients, except the Hebrews (and they often doubted), referred it to the great First Cause. Modern times also has its inquiries and opinions; but notwithstanding all the deep investigations of philosophers and geologists, commentators, and divines, in extending, stretching and searching the sciences, in pacing from *cause* to *effect*, and from *effect* to *cause*, in scrutinizing and examining the leaves of "the petrified book"—in tracing the origin of terms and criticising the sacred text, in my opinion the real truth of the matter has never yet been disclosed.

Dr. Adam Clarke, from the first verse in the Bible, which he translates to suit himself, maintains that the Creator in "the beginning" produced the "substance" of the earth from nothing; but to say that something sprang from nothing would involve a contradiction of terms. I wonder how much of nothing it requires to make the least imaginable something, and how much it required to compose such a world, or whether there is any left to be formed into another. It is surely philosophical that what suffers loss is itself capable of

* The old Teutonic cosmogony we will not overlook on account of its oddity. Ymir, the great frost giant, who originated in frozen vapor, was slain by the god Odin and his brothers, and out of his body they formed the world. Of his blood they made the oceans, lakes, and rivers, of his flesh the land, and of his bones the mountains. His teeth and jaws they broke into stones, his brains they scattered into the air for clouds, and his skull they erected for the arch of heaven.

being exhausted. Then, according to this theory, the Creator can produce just so many worlds, and no more. It however might be justly remarked that the Doctor, in moving with the text, goes further into Creation than the Bible. There is no such language in scripture, neither is there a place for such an inference. We merely read that "God, in the beginning, created the heavens (for this is plural) and the earth." Now the term create has, like all other words, a limit, and if this can be obtained, we will be better able to decide the question. It is true that it is difficult and sometimes impossible to find the exact limitation of some words which occur in the writings of old authors, there having been no lexicographers in their day; but there are others, though we may have no separate dictatorial account of them, which expose their signification throughout the story. The word create happens to be one of the latter class.

Mr. Patton, in the Polyglot Bible, says, "Much stress has been laid on the Hebrew word *Bara*, as implying creation out of nothing but that it is not always so used, is evident from the 21st verse of this chapter, Gen. 1, "God created great whales, and every living creature that moveth, *which the waters brought forth abundantly*." Here the word *create* discloses its meaning: implying springing from something, to bring forth, and has a strong relation to the verb *bear*; and this is the true sense in which its primary meaning is developed in the Old Testament scriptures. This is also proved from Ezek. 21:30: "I will judge thee in the place where thou wast created, in the land of thy nativity"; or I will judge thee in the place where thou didst first appear, where thou wast born, in the land of thy nativity. Again, in Psalm 102:18, "This shall be written for the generation to come, and the people which shall be created shall praise

the Lord." *i. e.* future generations—those who in the future should spring from, be born of, their parents. See Psalm 104:30, Isaiah 65:17.

Another passage—Psalm 104:29—might be quoted in discussing this point, which cannot possibly be set aside. The Psalmist, speaking of the animals, says: "Thou hidest thy face, they are troubled; Thou takest away their breath, they die, and return to their dust; Thou sendest forth thy spirit, they are created; and Thou renewest the face of the earth."

"The resemblance," says Hitchcock, "between this language, and that employed to describe the original creation, is striking. Indeed, the same word—*bawraw*—is used." Is not the word create, in this place, synonymous with the word born?

Further, we are told, Gen. 1:27, that God created man, and here the same word *bawraw* is used as in verse 1, but instead of the narrative leaving us to entertain the monstrous idea that he was created from nothing, it goes on to say that it was from "the dust of the ground." In short, there is not an instance in the Bible of the term *create* implying creation out of nothing. We are therefore, driven to the conclusion that instead of our earth having been created out of nothing, it *sprung from* something inasmuch as it is said to have been *created*.*

This, however, is not the only mistake the learned Doctor has made. He further remarks that the earth stood motionless in space, from the moment of her creation until the fourth day—when the sun was made a light to the earth—when, as

* Doederlin, Dathe, Milton, Bush, and Schmucker contend that the word translated *to create* in verse 1 teaches only the remodelling of the universe from matter already in existence.

he imagines, the Creator gave her the forces, and placed her in subjection to the laws that support and guide "the planets in their course." It may, at first sight, appear to the reader that this is quite a plausible statement, and an opinion not to be easily exploded; but one remark is sufficient. He acknowledges, as the Bible very pointedly teaches, that the earth on the first day was covered with water, or rather enveloped in it, and consequently, if motionless in space, must on the third day, and morning of the fourth, been a perfect sphere. But at the present day, it happens to be vastly different, being in the shape of an oblate spheroid, and having the equatorial diameter twenty-six miles longer than the polar. Hence, allowing the opinion of Dr. Clarke to be correct, her diurnal motion must, since the fourth day, have collected at the equator, a strata upwards of six miles in thickness, a conclusion which is preposterous in the face of both reason and geology. Even did we allow the interpretation of Mr. Hugh Miller, that the six days of the creation extended over the entire geologic ages, an idea of which the Doctor never dreamed, this idea would be equally absurd and unfounded. The fact is, our earth revolved ever since it had a being, and doubtless was the theatre of several distinct creations long anterior to the commencement of the present order of things.

The science of geology, having made during the last half century such rapid advancement, has shed a flood of light upon the past history of our planet; and the revelations it has made, and the evidences it has furnished, amply provides us with the means not only to explode the doctrines of infidelity, but to trace up through the misty van of ages the *condition* and *changes* of our earth to the very threshold of its creation.

Our globe is reckoned to be about 8,000 miles in diameter, while the deepest artificial perforation yet made reaches to but a few hundred feet. If we compare the depth of the Artesian well near Paris—the deepest shaft sunk by man—to the body of the earth, it is relatively little more than a scratch through the enamel of an artificial globe; still so industrious have been the labors of geologists, that the general structure of the earth's crust has been correctly ascertained, and the rocks and soils, which enter into its composition, arranged and classified. Also, by the great mass of evidence now brought to light, the internal constitution of the globe has, to some degree of satisfaction, been disclosed. It is now the generally received opinion that the centre of our earth is in a molten state. This appears quite plainly indicated by the lavic emissions of volcanoes, a fact which of itself strongly presses to such a conclusion. But there are other evidences worthy of notice: "It has been found that on penetrating into the earth below the depth of one hundred feet, an increase of temperature takes place both in solid rocks and in internal reservoirs of water, the increase being at the rate of about one degree of Fahrenheit's thermometer in forty-five feet.* And, accordingly, springs, which have their sources at greater depths, possess a higher temperature than those which derive their supplies nearer the surface. This has been proved by water obtained from Artesian wells at various depths."† From such data it is supposed that at

* It is hence calculated that at 7,290 feet below the surface, the heat is equal to 212° F., the boiling point of water. At 25,500 it will melt lead: at 21 miles melt gold: at 74 melt cast iron; and at the depth of 100 miles all is fluid as water.

† Zorlin's Physical Geography.

the depth of one hundred miles below the surface all is a mass of boiling rock. From these facts we may very readily account for the idea so ardently advanced by geologists, that the entire bulk of our globe was primarily in a state of igneous fluidity. It is the current opinion among them that our earth is a part of a broken or bursted planet, and that it was in a molten state when it became detached from the larger body. It, however, appears to me quite plain that they referred it to such a source from the fact that it is generally supposed that the asteroids Ceres, Pallas, Vesta, and Juno are fragments of a planet which, it is conjectured, formerly revolved between Mars and Jupiter. But what necessity, benefit or credit, in making such a supposition! Would it not have been more Christianlike to refer it to the hand of the Deity, according to the order of His will. All the heavenly bodies could not have been fragments, especially those of our own system: at all events there must have been one to begin with; and as long as there is not sufficient reason to even partially justify an assertion, I see no necessity in its being made. It is true the idea would exactly fulfil the meaning of the term *create*, still we have no reason to believe that the Creator produced our planet in an order different from what He did every other planet belonging to the solar system. "Order is Heaven's first law"—it is written on earth and diamonded in Heaven.

We however believe in the doctrine of internal heat, inasmuch as it is sufficiently apparent to challenge refutation. There is nothing unphilosophical or unscriptural in taking such an hypothesis, though there may be at present a difficulty in impressing the mind of men with the fact that the earth was first produced or created in the state of *fluid fire*. It is however given here as my candid opinion,—an opinion founded upon the arguments of the ablest men of modern

times,—that this was the state in which our non-inhabited world was on becoming a planet. But now comes the enquiry, from what did it spring? We answer that our earth was nothing more nor less than a comet full grown, and that the latter originated in the sun, evidently, as will be afterwards shown, from the solar volcanoes, as did every other comet of our system. It is in these pages urged that the comets are the creative process of the Deity in producing planetary worlds ;—that they continue to travel in their elliptical orbits till they attain a certain volume and density, and that when the attractive and repulsive powers of the luminous atmosphere of the sun can no longer attract and repel them, they fall under the government of the centripetal and centrifugal forces, and revolve like the planets round the sun. The comet of Encke is fast hastening to enter upon this new field of action ; and the astronomer, though he may greatly doubt the statements here made, will nevertheless, if time continues a century longer, see with his own eyes the truth of this assertion. When God created the human race, he did not produce forty persons nor yet twenty. It was not his will nor his order to do “all at once.” He only created a sufficiency to establish the species, but in a manner that they might “multiply and replenish the earth.” It was doubtless so with the lower animals. May it not have been so with the solar system? Was it not sufficient to produce the sun? Surely he did not create the planets all at once any more than he did the entire population of our earth: it was a gradual process. Are not the planets which now frolic round the solar sphere his offspring? Are they not the family, and he the parent, on which their existence depends? Does not the structure of the sun, and the effect he produces upon the comets, indicate that he was destined to give rise to other worlds? Is it not plain that the

tails of the comets are identical with his luminous atmosphere? These and other interrogatories will be duly considered under the article *Comets*.

This huge rotundity of incandescent matter, when travelling a comet,—darting far away in space, and then returning to the sun, the shiftings of the tail, and the heat it received from the parent luminary,—was ever kept in heated agitation; but immediately on its assuming the figure and motions of a planet,—the tail settling all around it in the form of a luminous atmosphere,—it no longer being in agitation, its surface began to cool. After the lapse of some time, probably after taking several revolutions round the sun, a solid crust collected upon the surface. The respirable atmosphere and aqueous substances which attended its first emergence into separate being, now became active in building upon the crusted surface. When the heat became sufficiently abated, the dense aqueous vapors, which were previously kept from the surface by the intense heat, now became condensed; and assumed the true liquid form, spreading in the form of lakes or oceans. When the temperature became still lowered, the coral insect began its work, other water inhabitants succeeded, and as ages rolled on still more were created: afterwards land animals appeared, and finally man.

Many have been the doctrines of sceptics with regard to the origin of the different orders of animal life.* The

* It is a singular circumstance that *silicious marl*, a deposit found at the bottom of peat bogs, is found to be almost entirely composed of the skeletons of *infusoria*, or animalculæ. Prof. Ehrenberg, a Prussian naturalist, has discovered 722 living species, which exist not only in fluids in general, but in the fluids of healthy living animals. The infinitesimal minuteness of these organisms may be seen from the statement of Leeuwenhoek, that one billion would not be larger than a grain of

Epicureans, at least, professed to believe that the earth, after spontaneously producing herbs and trees, began to produce in great numbers mushroom-like bodies, that when they came to maturity, burst open, giving egress each to a young animal, which proved the founder of a race; and that thus, in succession, all the members of the animal kingdom were ushered into existence." "The Anser Bernicla, or barnacle goose, a common winter visitant of our coasts, was once believed to be developed out of decaying wood long submerged in sea water; and one of our commonest cirripedes, or barnacles (*lepas anatifera*) still bears, in its specific name of the goose-producing *lepas*, evidence that it was the creature specially recognized by our ancestors as the half-developed goose. As if in memory of this old developed legend, the bird still bears the name of the barnacle, and the barnacle of the bird; and we know, further, that very intelligent men for their age, such as Gerardes, the herbalist (1597), and Hector Boece, the historian (1524), both examined these shells, and knowing little of comparative anatomy, were satisfied that the animal within was the partially developed embryo of a fowl.* The atheist, on the other hand, contended for the infinite series; but while he was thus playing the harp of his bigoted doctrines, and extending his arguments beyond the reach of metaphysical

sand; and Ehrenberg estimates that five hundred millions are actually living in a single drop of water. Many strata are composed entirely of their remains; and in Sweden an edible earth, which is manufactured into a palatable and nutritious bread, is wholly composed of the shells of microscopic animals. The polished slate of Bilin, which forms a layer upwards of thirteen feet in thickness, and the edible earth of Luneburg, a bed twenty feet in thickness, are composed of these animal remains.

* Miller's "Geology, in its bearings on the Two Theologies."

theology, the geologist steps upon the stage, and with a vein of testimony and eloquence against *ad infinitum*, sifted his doctrines, as well as those of the sagacious Epicureans, to the winds. Geology incontestably proves that every order of creation had a beginning and an end, and that there is no changing of one species to another, or that they give rise to different classes, but that as any department of life appeared, so it continued and so it ended.

As the Creator caused light to shine out of darkness, so he delights to bring great things out of small. While the apparently almost insignificant insect, the coral,—the only monad of organic life that could possibly endure the almost insufferable climate—that inhabited the deep, the way was preparing for higher and higher orders of existences. “At length in an upper bed of the system (the Silurian), immediately under the base of the Old Red Sandstone, the remains of the earliest known fishes appear, blent with what also appears, for the first time, the fragmentary remains of a terrestrial vegetation.”—*Miller*.—During the deposit of the Silurian strata, it appears that the earth was of too high a temperature for the *vertebrate* orders; for while the *molluscs*, corals, and crustacea had lived for many ages, the vertebrates do not appear till towards the very close of the Silurian system. Birds make their first appearance early in the Oolitic, and the first order of *mammals*—the marsupiate—between the “Inferior” and “Great Oolites”; but the higher orders of mammals do not appear till in the division termed Tertiary. The period of the Newer Pliocene has been called “The epoch of gigantic mammalia.” “In this period, immediately preceding the existence of man, the earth teemed with large herbivorous animals, which roamed through the primeval forests unmolested, save by beasts of

prey.* Ranged at once chronologically by their mode of reproduction, says Mr. Miller, the various classes of the vertebrata would run as follows: First appear cold-blooded vertebrates (fishes), that propagate by eggs or spawn—chiefly by the latter. Next appear cold-blooded vertebrates (reptiles), that propagate by eggs or spawn—chiefly by the former. Then appear warm-blooded vertebrates (birds), that propagate by eggs exclusively. Then warm-blooded vertebrates appear upon the stage, that produce *eggs* without shells, which have to be subjected for months to a species of extra-placental incubation. And last of all the true placental mammals appear. And thus tried by the test of perfect reproduction, the great vertebral division receives its full development in creation.

We therefore see the gradual process the earth underwent, as well as the orders of life, before all became adapted, according to the workings of the Creator, for the reception of the human species. But during the “myriads of ages” which elapsed from the first appearance of vitality upon our planet, till the geologic epoch of man,—last born of creation,—different creations took place after the destruction of the previous stock. It is certain that there is not a foot of land, now above the level of the sea, but has more than once been covered by the waters of the ocean. The close of organic life was, therefore, during the geologic periods, brought about, as geologists themselves acknowledge, by “the sinking of the land.” And on its again being emerged from the water, new tribes were created, with perhaps a revival of some of the immediately preceding; still it does not appear that any race of land animals extended through any *great* geologic

* Dr. Mantel.

period. That there were different creations of animal life, geology plainly testifies. "Every plant and (land) animal that now appears upon earth, began to be during the great Tertiary period, and had no place among the plants and animals of the great Secondary division. We can trace several of our existing quadrupeds, such as the badger, the hare, the fox, the red deer, and the wild cat, up to the earlier times of the Pleistocene; and not a few of our existing shells, such as the great pecten, the edible oyster, the whelk, and the pelican's-foot shell, up to the greatly earlier times of the Coralline Crag. But at certain definite lines in the deposits of the past representative of certain points in the course of time, the existing mammals and molluscs cease to appear, and we find their places occupied by other mammals and molluscs. * * * * * And thus group preceded group throughout all the Tertiary, Secondary, and Palæozoic periods * * * * * All geologic history is full of the beginnings and ends of species."* It is also worthy of remark, that some great change must, at different times, have taken place according to the variation and distinction of the strata.

That the extinction of the different creations was caused by the sinking of the land, is argued very pointedly from the foregoing quotation (from the Testimony of the Rocks), and, therefore, we would expect to find that the land animals alone were affected, while the event had little or no influence upon those in the water; and this appears to have been the case, for while the above mentioned land animals disappear in the Pleistocene, the shells can be traced to the "greatly earlier times of the Coralline Crag." We learn also that the

* Miller.

dog-fish—of the placoidal order,—“the earliest fishes,” and the sturgeon—of the order of ganoids, which appeared “with the Old Red Sandstone,”—are still found in our seas. “The Cestracians,” says Mr. Miller, “which appear in the Upper Ludlow Rocks, as the oldest of fishes, continue, in at least one species, to exist still.”



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CHAPTER II.

THE SUN.

THE sun, the central and principal sphere of our system, was for many ages a mystery and a wonder to the world. Many were the opinions the ancients had respecting it. Some nations believed, at least the Greeks and Romans, that the chariot of the sun was drawn by four horses, breathing fire ; and the old Teutonic religion taught that the sun and moon were chased through the heavens by ravenous wolves, which ever strove to devour them. As some of the ancients believed him to be a world of fire, being the source of light and heat, without which all human happiness would be blighted, he was looked upon in the dark ages as the fountain of goodness, and the great dispenser of secular blessings. Hence many nations of antiquity, as the Persians and Carthaginians, regarded him with reverence, and made him the principal object of their devotions, and many were so attentive to their supposed duty that they were careful to go forth in the morning *to meet him* at his rising. That they considered him a body of fire is apparently indicated by the fact that they were fire-worshippers, as were many of the ancients. There is a tradition that Abraham was thrown into the fire for refusing to worship that element ; and from different sources we gather that human victims were frequently sacrificed in worshipping that luminary. But the doctrine of the sun's being fire, though gratuitously received, according to the evidence of the unassisted eye and blinded reason, has at length been regarded

by the philosophical inquirer as fictitious and whimsical. We, however, occasionally, even in this day of intellectual light, meet a logician, as for instance, the Very Rev. W. Leitch, D.D., Principal of Queen's College, Kingston, who still maintains the old theory that the sun is fire, and that the comets are his fuel.

It is a remarkable fact that the most important body of our system has been till very recently, the object of the least inquiry. The curiosity of the astronomer was more acutely disposed to ascertain the extent and bounds of the universe ; and his delight was to introduce some new discovery in connection with the planets and their attendant phenomena, rather than to halt and muse upon the central sphere. Perhaps from the fact of his diurnal visitations being viewed by every one, it has been thought there is nothing so remarkable and entertaining in exploring his surface, as in roving far off in space in quest of some new discovery. The mind of man is ever seeking for "something new." But the eye of the telescope has at length been directed towards him, and has succeeded in revealing unto the world the mysteries of his existence. It is now pretty well established and adhered to by all astronomers, that the sun consists of an opaque body, surrounded with a luminous atmosphere, and it might be added, that there is in all probability—he being a habitable world—a respirable atmosphere situate between his luminous atmosphere and opaque body. It is also obtained that his diameter is 883,210 miles, as he fills an angle of about half a degree. That he contains five hundred times as much matter (supposed) as all the planets that roll round him—that he is 1,400,000 times larger than our earth, and that he travels like the planets in an orbit probably round a great central world. The constituents of his luminous atmosphere,

inquiry has never yet revealed. Dr. Leitch,* however, appears to flatter himself that he has attained somewhat on this point; but if we trace out his arguments, we will find them worthy to be styled spurious. The shades and colors which he observes in a total solar eclipse, we here boldly state, and which will become apparent afterwards, are unworthy of notice, inasmuch as they are the creations of the solar rays, penetrating the lunar atmosphere. "An interesting question in connection with the combustion of the sun," we find him saying, "is : How is it supplied with fuel ?" and finally concludes that "the machine—the solar system—is running down," and that "the central fire will finally be exhausted." But suppose the sun to be fire, (as he readily asserts, without giving a solitary reason,) and in a state of "incandescence," would it not be a wild conclusion that "the machine is running down?" (But would all the heat it is possible to imagine the sun to contain, at all lessen its density ?) And even allowing that the central fire will finally be exhausted, it does not follow that the machine will run down, or, in other words, that the comets and planets will, as he has it, "fall into it." If the sun is in a "state of combustion," and to use his own words, suffering "a real loss of power," we are assured that the force by which they are restrained from moving far off into space, which would blot from the page of existence every trace of organic life, must evidently be slackening; and, therefore, when "the central fire" is actually "exhausted," instead of the planets falling into the sun, it will happen quite the reverse, as they would reel from their common centre, when no longer subject to the guidance of the centripetal force, to travel the regions of

*With regret we note the death of Dr. Leitch since this was written.

eternal frost, and intrude upon the empires of other systems, to hurl them from their orbits, and lash them to chaos. But that the Creator has so exalted our system as to eventually employ it as a battering-ram to drive worlds from their ancient seats, and sweep the heavenly bodies from the fields of creation, to mingle in one common ruin, is a conclusion which good judgment, such as the Doctor's, would scarcely recognize, but which, we admit, might be the case if the sun is fire. But if it still be urged that the sun is in a state of "incandescence," it is asked, How does his heat reach our planet? Heat is incapable of forcing itself to distant objects.* It cannot pass from one object to another without being conducted through the agency of some medium. Then allowing the sun to contain a

*I am well aware that the opinion of chemists in general is upon this point against me, still I am unwilling to acknowledge the idea that heat is capable of passing through space by radiation where there is literally nothing, till more light is given upon the subject. Heat is generally understood to be *the result of the vibrations of elastic media, or a subtile fluid*. Now, if we assume the first definition to be correct, heat cannot exist where there is no elastic media; and in granting the latter we grant a power acting in the heated body for a fluid, no matter how subtile, cannot pass through a literal nonentity without a moving power; and if there is a constant stream of this subtile fluid pouring from the sun, the central fire will, as Dr. Leitch thinks, be exhausted, sure enough! But we do not think that there is not a sort of ether mingled with our atmosphere which in some way or other acts as the agent of heat, for we know that heat will radiate even more freely through a space where there is no air, than it will through air itself. The presumption, therefore, is that the particles of air are opposed to its passage, and not that heat can pass where there is literally nothing, for this we do not know, for we can never make a perfect vacuum. Now, if chemists can show that this *elastic media* exists throughout space, this point of my argument against the sun being fire will have little force. However, it is my opinion that there is, strictly speaking, no such thing as the radiation of heat.

heat ten billion times greater than the most intense known to man, what effect would it have upon our earth? The atmosphere does not extend to the sun, and, therefore, could not act as conductor. It remains for those who hold such doctrine to point out the conducting medium. But let us grant that the ether in space,—supposed by the partial obstruction the planets meet with—acts as the conductor, will we be treading any safer ground? Is it not well known that the intensity of heat decreases in proportion as the distance from the heated body increases? Then allowing the sun to be fire, and his heat to reach, through the conducting power of the ether, every planet of the solar system, it will be found that the planets Mercury and Venus, which are distant from the sun respectively thirty-seven and sixty-nine millions of miles, would possess a temperature that would melt our crystalline rocks; while Uranus and Neptune, which are distant many hundreds of millions of miles, would receive such a small amount of heat that water would be as solid as iron, and our atmosphere would be resolved into a weighty liquid. This would be as preposterous as the utility of God's works is apparent; for if one of the planets at a mean distance from the sun is inhabited as our earth, why not the sister planets? and if so, how, according to this theory, could the animal and vegetable kingdoms exist? In short, until philosophers in their wide ramifications can clearly establish that there exists between the sun and every visible primary planet of the solar system, channels distinct from each other, and of various densities,—a theory which would leave the secondaries uninhabited, but which I despair of ever seeing proved, the idea of the sun's being fire will still be looked upon as foolish and ridiculous.

But the idea has just occurred to my mind that the Doctor

above quoted may have a *warm side* to "the old theory . . . being revived" from a certain point in geology. By the organic remains discovered in the strata of the northern regions, it is demonstrable from geology that our earth in very remote ages enjoyed in those high latitudes, a temperature even higher than the equatorial districts of the present day. This, of course, if due to the solar rays, would at once argue that either the earth is now at a greater distance from him, or that the heat from the sun had since that period decreased in intensity. It is scarcely necessary however to remark that the heat our earth enjoyed previous to the commencement of the present order of things had not its origin in the sun, as he did not then exist as a light to our planet, not indeed till after "the fourth day." It is also conclusive that if the sun in those remote periods had been the source of such heat as to keep the temperature to such extremes in such high latitudes, that then the torrid zone must have had such a burning climate as to render it uninhabitable. Evaporation would have been so excessive, and the rarefaction of the atmosphere so extensive, that our planet must have been the theatre of unceasing rains and violent tempests, of which the African torrents and the terrible simoom are faint representatives. The lofty trees of the Carboniferous period, instead of having been nourished by refreshing dews and gentle breezes, enjoying a mild temperature and a genial atmosphere, would have been exposed to the fury of the warring elements. Vegetation could have been no otherwise than exceedingly imperfect, if it could at all survive, as the excessive heat, and veering and impetuous storms would likely have parched, comminuted, and scattered the struggling trees and herbage (could they exist), and thus banished the animal kingdom from the face of creation. Geology

however stoops to no such commotion, neither is there any testimony in its sacred treasure that indicates that the sun was the source of light and heat till the fourth day of the Mosaic creation. It will be shown that it rather proves the reverse.

But further: was the sun made merely to light our earth or rather was he created for that purpose? Was it necessary that the Creator should sacrifice the largest body in our system to merely light the habitation of man? (If so, we grant that he may—as far as this is concerned—be fire.) We would evidently infer this from the reading of the Bible, just as we would infer that the sun and moon stood still at the command of Joshua, but our inference is evidently wrong, for he gives light to other worlds as well as to ours. The Bible goes into no minutiae, except when directly called for. It is not even said that the sun was made the source of heat yet as much so as of light. I see no reason, therefore, why we should credit, much less endorse, the doctrine of the sun's being fire, especially when we take into consideration that such an hypothesis denies him being a habitable world. And if the views of Dr. Herschel are correct, it is certain that the sun is more adapted to the strength, health, long life and happiness of inhabitants than any other sphere belonging to the solar system. But if the sun was a body of fire during the geologic ages (for he existed then as much as he exists now), he was also in that state on the morning of "the first day." But then how did it happen that he was not a light before "the fourth day" of our creation; at all events on "the third day," (which was many years) after the atmosphere was refined?

Again: if the sun is fire, the space between the earth's orbit and that luminary must have as high a temperature

(i. e., there must be as much heat there,) through his direct rays as those regions which are not additionally heated by *reflection*. Or (to close in upon the point) the top of Chimborazo, for instance, can be no colder than the less elevated summit of another mountain that receives no reflected heat. This, every one knows, is nonsense. The direct rays of the sun, even upon those natural pinnacles, are found to be greatly less intense than at the level of the sea. Burning glasses, as powerful as those of Archimedes, are, at such high elevations, comparatively but faintly active ; while, at the earth's surface, the hardest substances, as the metals, (even platina) are speedily, when placed in the focus, resolved into a liquid. Now this could not so happen if the sun was fire.

Again : if the sun is fire, it is evident that the nearer we are to him the greater should be the heat. But it is not so. The temperature of the earth's surface is no higher when in perihelion than in aphelion. The countries south of the equator, where the inhabitants enjoy their summer season while we endure our winter, when the earth is three millions of miles nearer to the sun than when we enjoy our summer, have that season no warmer than those at an equal distance north of the equator. On the contrary, it is colder.

Lastly : if the sun is fire, light exists throughout the wide space encircled by the track of the remotest planet of our system, at all events within the orbit of the earth. If heat travels from the sun, light must also ! But if this was the case we would have no such thing as night in the strict sense of the word, and the moon and the stars would forever be to us invisible. Experience, however, as well as reason, proves that the light we enjoy by day is only a creation of the solar something (beams if you like) penetrating our

atmosphere, and therefore above the atmosphere,—through-out space—there can be no light, inasmuch as there is no friction. Travellers that have ascended such lofty mountains as the Himalayas, the Alps, and Mont Blanc, have found, to their astonishment, that the heavens had assumed the aspect of blackness, which argues that at greater heights darkness is more dreary. This point is very clearly proved by certain phenomena attending a total eclipse of the sun. Of the remarkable solar eclipse which took place April 22nd, 1715, Dr. Halley says: “as to the degree of darkness it was such that one might have expected to see more stars than were seen in London (where he observed it). The planets Jupiter, Mercury, and Venus were all that were seen by some; Capella and Aldebaran were also seen. I forbear to mention the chill and damp with which the darkness of this eclipse was attended; or the concern that appeared in all sorts of animals, birds, beasts, and fishes, upon the extinction of the sun, since ourselves could not behold it without emotion.” Another observer, J. C. Facis, of Geneva, says, that “Venus, Saturn, and Mercury were seen by many. Some persons in the country saw more than sixteen stars, and many people on the mountains saw the sky starry as on a night of a full moon.”

From the above we observe that the more elevated the individual the greater the darkness, for while only a few stars were seen in London, a number were visible to the spectator on the more elevated country of Switzerland, while the whole starry firmament was distinctly seen by those on the mountains; and as the darkness manifestly increased in proportion to the height of the observer, it follows that above our atmosphere nothing can be seen—all is one “palpable obscure.”

From what has been said it follows that if our earth had no atmosphere, it would enjoy no light. The golden orb of day would never cheer, invigorate, and refresh the flowery robe of nature with his beams, as he would be forever unseen ; and the lunar orb and twinkling stars could never welcome our gaze, as they would also be for ever locked up in the dungeons of eternal night. It is evident therefore that the heavenly bodies are to us rendered visible only by the agency of their atmospheres. Worlds might travel, had they no atmosphere, in orbits probably not more distant than the nearest planet, and yet never be open to the view of the astronomer. It is possible that it might have been such a body that caused the remarkable lunar eclipse on 20th April, 1837, when both the sun and moon were at the same time above the horizon. This however is generally ascribed to refraction. That light exists only in the atmospheres of the heavenly bodies, is a point that the pen of the ablest astronomer appears to have but imperfectly, if at all considered, as the existence of a lunar atmosphere, by the inquiring world, has long been denied. The same might be said of the planet Jupiter. But the fact of the moon being visible, argues her an atmosphere, and so with every visible primary and secondary planet of the solar system. But the truth of this statement would have received but a cool reception a century ago ; still it is now placed beyond all doubt. Astronomers have frequently observed, during a total eclipse of the sun, phenomena indicating the existence of a lunar atmosphere ; but they, like Dr. Leitch, preferred referring it to the sun. J. C. Facis, before quoted, speaking of the great solar eclipse, remarks that " there was seen during the whole time of the total immersion a whiteness which seemed to break out from behind the moon ;" and Dr. Halley, seeming to display still greater judgment in the matter, of the

same, says that "a few seconds before the sun was totally hid, there discovered itself round the moon a luminous ring, in breadth about a digit, or perhaps a tenth part of the moon's diameter: it was of a pale whiteness or rather pearl color, seeming to me a little tinged with the colours of the iris, whence I concluded it was the moon's atmosphere, for it in all respects resembled the appearance of an enlightened atmosphere viewed from afar." But the proof that the moon has an atmosphere is still more positive. Recent observations on the occultations of Jupiter and Venus by the moon render this beyond probability. "On April 5, 1824, Mr. Ramage of Aberdeen, Capt. Ross of the Navy, and Mr. Comfield at Northampton, observed with excellent telescopes the occultation of Jupiter, and to all of them the disc of the planet appeared distorted when it approached the limb of the moon. Mr. Comfield at Clapham, on October 30, 1825, observed on the emersion of Saturn from behind the dark limb of the moon, first the disc of the planet, and then the eastern extremity of the ring decidedly flattened," phenomena perfectly analogous to what would be produced by refraction.

If light is only in the atmospheres of the planets, it is apparent that it must be the result of friction. In short there is something which emanates with an amazing velocity from the sun, as proved by the eclipses of Jupiter's satellites, and, though in itself cold and invisible, causes, while penetrating the atmosphere, friction with the aerial particles, developing light and heat. This being continual through the day we have constant light and heat: but at night, when the sun has sunk beneath the western horizon, friction ceases, and hence light ceases also. If a stone were thrown through a volume of water with half the velocity of light, it would create such a friction with the aqueous particles in its passage that its

path would be a streak of light while it would carry with it a blazing tail like a comet. What this substance of such infinitely minute particles is that is continually poured forth from the sun has not yet been ascertained. In my opinion it is an agent of the luminous atmosphere of the sun. This atmosphere I contend is either electricity or something that has exactly the same properties of attraction and repulsion. What in existence would be more adapted to reveal the true theory of the heavenly bodies and remove the difficulties and cloudy errors in connection with solar light and heat. What else can possibly testify to the mild temperature of the planetary spheres? It alone can melt the frigid garment of Uranus, and cool the boiling cauldrons of Mercury: it alone can thoroughly convince the philosopher that the sun is inhabited. If we for a moment acknowledge the robe of the sun electricity, which the comets ever tell in their voyages, enormous difficulties are surmounted in an instant,—difficulties that can be dispensed with in no other way. We can then see clearly why light and heat are created only in the atmospheres of the heavenly bodies, as previously proved:—how every planet of our system is liable to enjoy a temperature in proportion to the rarity or density of its atmosphere, and therefore the possibility, nay the probability, of them all being inhabited:—how the comets perform their wondrous rounds “doubling wide heaven’s mighty cape:” how the fourth day’s labor was effected: in short how all that has been specks in the eyes of astronomers for centuries may be analyzed and brought to light. Without acknowledging the sun’s atmosphere electricity, the world may be put to defiance to account for the forementioned phenomena. All other theories, the more they are extended, the more difficulties they involve. Instead of leaping into the dark, and making assertions wild and

unsatisfactory by recognising the electric garment of the sun, we are entitled to a theory that requires none to vanquish reason, and stretch the cords of incredulity; but which demands only an unbiassed mind willing to look truth in the face.

That the luminous atmosphere of the sun is electricity is, I am satisfied, sufficiently indicated to make it plain to any reasoning mind, by its attractive and repulsive forces that travel the comets. Should any, however, deny that his atmosphere is electricity, (and *that* they must do, if they do at all, in the very face of reason,) they cannot possibly deny its properties of attraction and repulsion. And if it sends forth the comets to the very verge of our system, and forces them to return, may it not and will it not use *any* substance in the same manner? Well now, if there is a "thin ether" in space, as astronomers have long since declared, it must be continually going from and returning to the sun like the comets. In fine, it is the honest conclusion of the writer, and which he willingly presents before the world for refutation, if an error, that light is the result of invisible elastic particles being repelled from the sun continually and penetrating our atmosphere. These particles, minute as they may be, but which extend throughout our solar system, when they return to the sun, become *positively electrified*, and are repelled. After travelling a sufficient distance so as to give off their electricity and become in a negative relation to the sun, they again return, and are again put to flight. Thus the ether in space—the instrument of the sun in producing light,—is continually in speedy revolving motion. This theory of light is submitted to the speculation and criticism of the reader; all that is asked is a candid, honest, honorable decision in the matter. I need not remark that the theories of Newton and Huygens were ever confused and unsatisfactory.

The reader will please pardon me, as I am treating upon the sun, if I again refer to the atmospheres of the planets. It has been said that the intensity of the light and heat which any planet enjoys is in proportion to the density of its atmosphere. Be it remembered that we are disposed to acknowledge no theory that deprives any planet of inhabitants, or argues them an unhappy residence! It may at first sight appear that if the distant planets, as Jupiter and Saturn, possess an atmosphere as dense in proportion to their bodies as the earth's, that they must only be a battlefield for the warring elements. If either of those planets were the same as ours, the sun having an apparently smaller diameter, they could not possibly be inhabited:—the very high temperature at the equator would wage an eternal war with the very low temperature at the poles; the changing seasons would sweep all from the face of creation. In short, all would be terror, misery, wreck, ruin, death. No such events, however, take place either upon the surface of Jupiter or Saturn. They are all counteracted in other phenomena: first, these planets revolve so speedily upon their axes, that their atmospheres retain nearly in every part the same degree of temperature; second, the electric ring which extends over the equatorial regions of Saturn prevents the solar beams from causing too great heat at the equator—thereby preserving the equilibrium of temperature; third, Jupiter has no variety of seasons; fourth, their polar regions are additionally lighted and heated by a train of moons. The planet Mars, it is probable, has an atmosphere proportionally denser than any planet of the solar system. This is proved by his fiery red appearance. But even was this no proof, we could reason on to the same conclusion. All the other planets, except Venus and Mercury, have attendant satellites. Venus does not need one, neither does Mercury, as they are so much

nearer the sun than the earth that his apparent diameter is proportionally greater, and therefore the light they receive proportionally extends over a greater surface, and hence their days are long and nights short. Our earth is the first in the order from the sun that is provided with a moon. We would expect also to find one if not two with the planet Mars, but there is not; and as this absence must be supplied by something in connection with that planet, either by its speedier revolution on its axis, or by having a denser atmosphere, it is easy to form the conclusion that it must be the latter, for he turns upon his axis not even in as short a space of time as our planet.

Let us now turn our attention to the creation of the sun. We read, in the beginning God created the heavens and the earth. "Heavens and earth," says Dr. Clarke, "means more than the atmosphere. Nor does it appear," he continues, "that the atmosphere is here intended, as this is spoken of in verse 6, under the term firmament. The word heavens must therefore comprehend the whole solar system." This is strengthened by the heavens being spoken of in chap. 2, as "a host." The psalmist says: By the word of the Lord were the heavens made, and all the host of them by the breath of his mouth. But if the sun was then made, it is not said that he was then created. There is a wide difference between creating and making. We are not at all to understand from the text a literal creation. We could easily cite the opinions of many judicious expounders of the Bible showing from the original that the heavenly bodies on the fourth day were only then appointed to be luminaries. "The word used," says Dr. Hitchcock, "is not the same as that employed in the first verse to describe the creation of the world; and the passage rightly understood implies

the previous existence of the heavenly bodies. "The words *נאורים* are not to be separated from the rest," says Rosenmuller, "or to be rendered *fiant luminaria*, let there be light; that is, *let light be made*; but rather *let lights be*; that is, serve in the expanse of heaven for distinguishing between day and night; and let them be or serve for signs, &c." "The historian speaks (v. 16, end) of the determination of the stars to certain uses which they were to render the earth, and not of their first formation."* Dr. Geddes, who wrote before science had established the necessity for the *pre-existence of the heavenly bodies*, remarks, "The words 'Let there be,' are in my conception equivalent to 'Let there appear;' and if I had allowed myself the freedom which some modern translators have taken, I should thus have rendered the verse: Let the luminaries which are in the expanse of the heavens be for the purpose of illuminating the earth."

We must therefore conclude that the sun was created in *the beginning*. But to the common reader of the Bible this interpretation would appear strenuous and unfounded, and therefore would be rejected, and that, principally on the ground that God *made* the sun on "the fourth day." However the interpretation is perfectly correct, and the man of reason will readily perceive that it was absolutely necessary that the sun should exist before any other body of the solar system, as he is the central sphere and the support of every primary planet in the heavens. If the sun did not exist before the fourth day, then our earth stood motionless in space, and did not travel till after the fourth day; but we have already shown the contrary, and hence as she travelled

* Hitchcock's Religion of Geology.

it must have been round the sun which therefore must then have existed. And further it is plain that some of the planets—Jupiter, Saturn,—in fact all of them, existed before the fourth day, if Dr. Clarke's interpretation is correct, and therefore the sun must also have existed, or else they would either have fallen to the earth or into some of the so called fixed stars. But for the sake of argument, let us suppose our earth actually did remain motionless in space, as broached by Dr. Clarke, before the fourth day. Now c.c. the previous day, the third, the land and water were separated and each fixed in its proper place. Suppose on the fourth day that the earth commenced turning upon its axis, when the new born sun was hung aloft to the ceiling of heaven, and what would have been the result? Nothing less than a universal deluge would have taken place. The rotatory motion of the earth would have caused the world of waters to emerge in one rushing tide from the poles, and, collecting at the equator, would have swept the vegetable kingdom with all its beauty and nutritious "fruit" from the table of creation—blasted the beauteous mechanism of the Deity, and not only made the land a heap of ruins, but would continue to remain (having a depth of several miles) upon its surface. The Creator, it is true, might have raised the land sufficiently high as a preparation for this change, and thus "prevent such horrid fray;" yet even then it would require a miracle to prevent the vegetables from being ruined by the frost, as the land at the equator would require to be at least as high as the summit of Chimborazo, above the level of the sea; but even then the waters, in their gigantic motions, dashing against the rocky walls of the shore and raising clouds of spray, would have saturated the entire atmosphere; and hence, together with the rushing aerial currents, a prodigious rain, hazarding creation

to as great a wreck as the former, would have been the sad result. The condensing clouds, spouting their ten thousand cataracts of flooding torrents, swept before hurricanes sufficient to pitch mountains from their seats, would have ruined the "tender grass" (margin), uprooted the fructiferous trees, and left the whole a ruin. But should it be offered as an objection that the land was too high at that time to be thus effected, I have but to reply that it did not rain at all, "for the Lord God had not yet caused it to rain upon the earth." (Gen. 2: 5.)

In fact, it is anything but philosophical to maintain that the sun did not exist before the fourth day. In short, the sun existed as he does now, and was beyond probability a habitable world long before our earth's existence; and no doubt the planets Jupiter and Saturn, and perhaps Mars, revolved as habitable worlds before our earth's becoming a planet. But now the biblical critic will be anxious to ask, How is it that God made "two great lights" on the fourth day? Are they not the sun and moon? It is answered, they are. But how could it be said that they were *made*, if they previously existed? We reply that the sun and moon were not made in one sense of the word; they were only made lights to our earth in the same way as God *made* Joseph a father to Pharaoh: *made* him lord over Egypt: *made* the Jordan a border between the tribes: *made* Daniel the head of the heathen, &c. The Creator, on the fourth day, made no change in the sun, neither did he reform the surface of the moon, for they shone as brightly millions of years before the fourth day as they do now, yet not on the body of our earth. The Creator, on the fourth day, only caused the rays to reach the body of the earth, which were before prevented by something that intervened. But if it be denied

BEFORE THE FOURTH DAY.

that the moon existed before the fourth day, there are questions similar to this to be answered. How was it if the moon did not then exist that the land was not deluged on the fourth day by the tides? and what prevented the ocean from becoming stagnant from the first existence of our atmosphere till the fourth day if there was no moon? and this must have been a period of many years; and it must be borne in mind that then the tides produced the only agitation in the waters, for before the fourth day there was no such thing as the polar currents or the gulf stream. And if the earth, as geology incontestably proves, was the seat of animal life millions of years before the fourth day, what then preserved the waters of the ocean? These are points the reader should carefully consider before coming to a candid decision. But there is another question that presents itself. If the sun was not the source of light and heat our earth enjoyed during the geologic ages, what was? It is thus answered: The sun is a sun to his own inhabitants; his luminous atmosphere lights his own surface as well as that of every planet belonging to his system. Well our earth was once a world similar to the sun, having once been surrounded with a luminous atmosphere, and this was the source of light and heat till the great change of affairs on the fourth day. At that period the Creator introduced a great change in order to prepare the table of creation for the reception of a nobler guest in moving the luminous atmosphere not only from the earth but probably from all the planets of the solar system, and either scattered them through space to become "the ether" or agent of the sun in creating life, or else returned them to the solar atmosphere. Hence, on that day, the sun, moon, and stars became visible. But why did not the Creator finish his terrestrial work at once—inhabit the land, and cause

"the waters to bring forth abundantly," before he caused the source of light and heat to be in the sun, or, in other words, before he moved the earth's luminous atmosphere? Now there was certainly a reason, and this will appear from the following. God did not make the sun before he made animals, for the reason that there was not a sufficiency of light and heat; for what was sufficient to mature the vegetable world would evidently have been sufficient to preserve the animal, and we are informed that the trees bore fruit on the third day. Then what was the reason? It was because the change from continued day to alternate day and night would be injurious, and perhaps death to the land animals, though it is probable it might not have effected those in the water.

But what about the moon and stars? Were they seen in the day? It must have been so according to the diction of the Bible. They must all have been visible, sun, moon and stars, from the earth's surface at the same time; and this appears to have been brought about by the gradual departure of the luminous atmosphere. But if this was the plan on which God made the two great lights on the fourth day, would it not be equally correct to say that he made the stars also on the fourth day? It is answered it would. We read that God made "the lesser light to rule the night," and "the stars also," (to rule the night). In verse 16, (Gen. 1.,) "the word *made* not being in the original, stars may be construed more accurately with the verb 'to rule,' as by Dr. Anslem Bayley, Dr. A. Clarke, &c., 'and the less luminary to rule the night, with the stars:' so the Psalmist David, 'the moon and the stars which thou hast ordained,' namely: 'to rule the night.'* Psalm, 8: 3."

*Polyglot Bible.

But when were they ordained for rule ? On the fourth day. The stars were made then just as much as was the sun and the moon. It is not here hinted that the stars before the fourth day ruled the night themselves without the aid of the moon, because there was no such thing as night from the first till the fourth day (see days of creation); and even had there been, there was nothing to rule it, for the moon and stars were not made to rule it till the fourth day. But what necessity was there for the existence of the moon millions of years before the fourth day, when she did not then rule the night ? The moon was not created to light our earth ; she was only *made* for that purpose. No doubt she is a habitable world, and *was*, long antecedent to the fourth day. The stars also existed before the fourth day. How foolish is the vulgar opinion that all the stars were placed in the heavens to afford us light, since thousands of them are visible only with a telescope, and the moon gives us more light than all the stars together.



CHAPTER III.

COMETS.

COMETS have no doubt been objects of wonder and observation in all ages of the world. Indeed in the very ancient times they held the reins of superstition, and were, as in modern times, regarded with the utmost consternation. In fact they have ever been looked upon with superstitious fears till the deep astronomical inquiries of Newton, Halley, and their successors entirely destroyed their imaginary empire. It was the appearance of Halley's comet that spread terror through the superstitious ranks of the English at the battle of Hastings, and gave the palm of victory to the invader; and afterwards contributed not a little to the subjection of the county to the Norman arms. The long tail of the same comet, in 1451, infused anxiety and alarm among the Turkish soldiers, under the command of Mahomet the Second, during the terrible battle of Belgrade, in which forty thousand Mussulmans were slain. It is also well known that the comet which appeared in 1556 drove the emperor Charles the Fifth from his throne. The first comet of which we have any account was accurately described by Nicephorous. I will take the liberty to remark here, that it appears plain that the appearance of a comet is referred to in Judges 5: 20, where it is said that "the stars in their courses fought against Sisera." At the birth of the noted Mithridates, B. C. 135, two large comets appeared, which occupied forty-five degrees of the heavens, and were seen for seventy-two days together, their

brilliancy eclipsing that of the noonday sun. Seneca informs us that a large comet, before unseen, was observed very near the sun during an eclipse. Comets have also passed very near him in modern times. The comet of 1680 was calculated by Newton to approach within 580,000 miles from the sun when in its perihelion, which is but little more than half the sun's diameter. They have also passed very near the planets. Indeed it is said that in 1454 the moon was actually eclipsed by a comet, which was consequently within two hundred and forty thousand miles of our planet. Jupiter has been described as a perpetual stumbling-block to the comets. In 1770 one became entangled among his satellites and thrown out of its course, while the satellites were apparently uninfluenced. Such facts, or rather said to be facts, have disposed some astronomers to state that if a comet came in direct contact with our earth that it would produce no effect upon her; and some have gone so far as to invent a comet for the purpose of accounting for phenomena in connection with the Noachian deluge, asserting that its tail produced a sort of accumulated wave which overflowed the land. Half an eye could see that these two opinions are in direct collision; and common sense would teach that even if a comet is composed of but vaporous substances, its momentum would be sufficient to return our planet to the arms of chaos. No danger, however, may be apprehended of a comet ever meeting our earth, unless it should be at its inferior conjunction, very nearly at the time of its node,—a circumstance so very improbable that there are some millions to one against such a conjunction.

Comets, according to Newton, are of an opaque nature, and consist of a very compact and solid matter capable of bearing extreme degrees of heat and cold. That seen by him in

1680 he calculated, when in its perihelion, to contain a heat two thousand times greater than red-hot iron ; and it has been said that a globe of red-hot iron as large as our earth would require 50,000 years to cool. Newton, as we observe in this mathematical calculation, believes the sun to be a body of fire, and that the comets gradually cooled, as they receded from him into space. Sir Isaac first proved that though they, like the planets, revolve round the sun, yet their orbits are extremely elliptical, having the sun in one of their foci, approaching sometimes very near the sun, at others running far beyond the track of the remotest planet. Their orbits are not only extremely elliptical but extremely complicate, being inclined towards each other at every imaginary angle : some of them shoot up from below the orbit of the earth, whip round the sun, and descend ; while others are observed to dart down from on high, whirl round the sun, and ascend. It is easily seen that the comets cannot travel round the sun through the action of the centrifugal and centripetal forces like the planets, for these forces cannot move a body otherwise than in a circle, or nearly so.*

We ask, then, what moves and directs those singular bodies, darts them forth like so many bombshells through the wide abyss of space, as if to assure us they were the shot and shell poured from the ordnance and mortars of divine wrath, that chased the affrighted wings of the fallen host "in many an aëry wheel" down to the oceans of eternal flame ? We might almost think that their tails are but the liquid flame that dripped from their heels when rising out of the "fiery gulf," or that they still circle wide our universe as guards to pro-

* The reason the orbits of the planets are slightly elliptical is on account of the sun travelling in an orbit through space ; they being as it were left behind when they reach their aphelion.

tect it from foreign invasion. But we ask, what moves them? Through what power do they travel their long, almost endless journeys, and safely return, circle the solar orb, and again depart. It cannot be any internal power,—the process of cooling as some suppose; for if so, what would cause the tail to always be on the side of the nucleus opposite to the sun a short time before and after its perihelion, or what would prevent them from falling into it? The fact is, if the sun were fire, as some suppose it is, the comets could not avoid plunging into him for the simple reason that there would be ~~nothing~~ to prevent them. But there is a repulsive force in the sun; and what does this argue? What does the mighty speed of a comet, as it rushes so many hundreds of thousands of miles off into space, assure? All assures of a mighty power by which the comets are moved, having its seat in the sun. This it is certain is nothing more nor less than electricity, which moves the comets through attractive and repulsive forces. Yes, and who can deny it? It is plain that if attraction was one power, and the force of projection the other, when in perihelion the tail of the comet, like the waters of our globe, in relation to the tides being the rarest, would be drawn towards him, but it happens the very opposite. Does not the position of the tail, when in perihelion prove, as well as their elliptical orbits, that the comets are moved by attractive and repulsive forces, and that they act upon them from the sun? The comet when returning, as it draws near the sun, collects electricity from his luminous atmosphere. That part of the comet which is first electrified is of course gradually repelled according to the law of like electricities. Hence the comet's atmosphere or tail, being the rarest and next to the sun, and therefore the first and easiest to become electrified, gradually turns to the side of the nucleus opposite

to the sun as it draws in a proximity to him. The body of the comet is, at the same time, being charged; but as it is a longer process, it is not so easily nor so hastily repelled. It does not stand in a positive relation to the sun till it perhaps turns partly round him, but when fully electrified, it is violently driven off; and as the solid body of the comet is repelled with a greater violence than the tail, the latter, having a less velocity, is dragged after it.

One of the most unphilosophical statements astronomers have ever made is, that the comets are but vaporous bodies through which the stars may be seen; but it is surely unreasonable to suppose that stars could be seen through a body that is only just visible to the naked eye, surrounded with hazy substances, and literally flying through the heavens. It would be impossible, even were the comets of pure glass. However, it is certain that the comets, as Newton taught, are opaque, solid bodies, as is sufficiently proved by the fact that a nucleus much less than our moon frequently leads through the force of attraction a tail seven millions of miles in length. The tail of the comet is identical with the luminous atmosphere of the sun—of course it must be, inasmuch as it is a fragment of it rent out by a nucleus popping into being from the solar volcanoes. That it is identical, is proved by its repulsive forces. Comets have been seen with two or more tails, and the great comet of 1744 had no less than six. But why was it that the great force with which they are dragged after the solid body did not blend them? How is it that they did not unite and form but one? The only reason that is possible to be given is this. The tail of a comet, or any part of it, has a repulsive property similar to the luminous atmosphere of the sun. What causes the tails of the comets to be thus "split up," is the nucleus passing

through the tail a short time after its perihelion, when it is forced with a greater velocity than the tail, and hence divides it. This division will not disappear till the comet stops after all its electricity is given off, to return to the sun, when the nucleus, as it were, *backs up* and flies towards the sun according to the law of unlike electricities. Should the nucleus not pass through the centre of the tail, or sufficiently near the centre to separate it into two parts, the tail will appear single. The head of the comet of 1744 no doubt passed through the tail not less than three times, when it was crooked after its perihelion, by its great length and by the forces of the sun acting more powerfully upon the nearest part than the more remote. Sometimes the nucleus passes through the middle of the tail, especially when it happens to be very large in proportion to the bulk of the solid body, without dividing it; and hence as the opening thus made will not be closed on account of the repulsive nature of the luminous parts after division, it has been often observed that the tail has in some instances appeared less bright along the middle and immediately behind the nucleus. That the comets are habitable worlds does not appear, nor does it seem that they were destined to perform any part in creation except in the production of future worlds. Animal life could not possibly survive one revolution round the sun. When the comet is drawing towards its perihelion, the atmosphere and the tail must agitate such a wind as to be sufficient to even carry the animal and vegetable kingdoms from the surface, and sweep them far off from the cometic body. The heat also must be desperately intense and changeable. When the comet is at a great distance from the sun, running far off in space, the heat is somewhat less than when drawing near and just moving off from the sun. The heat however must be con-

tinually of the most intense nature ; for as the tail is the source of its heat and is in one extended trail behind it, the heat is formed upon its surface like the solar rays pouring through the focus of a concave lens, melting all before it to the very centre of the nucleus, and as the comet turns upon its axis, which it must to make it globular, it follows that every part of the surface is alternately presented to the furnacing stream, keeping the entire body in a molten state. Hence Mr. Whiston supposed that they could not be the abodes of happiness, and therefore was led to believe that they are the places of punishment for the wicked who were alternately wheeled in regions of intolerable heat and afterwards exposed to all the rigors of the most intense cold. "But," says Dr. Dick, "when we consider the boundless beneficence of the Divine Being, and that 'his tender mercies are displayed over all his works,' " we cannot for a moment suppose that so vast a number of those bodies would be created for such an end. If men could live upon the comets, there is no world revealed to us by the telescope that would be more adapted to respond to the cries of astronomical inquiry. Could we step upon the flying world as it rushes by our planet, this steamship of immensity would carry us over and beyond seas where we would perhaps see things more wonderful and exciting than even Lilliputians or Brobdignagians. At one time we would be skimming near the solar surface, and at others passing the different planets as one vessel passes another at sea (likely without salutation) ; and from one end of our journey to the other we could gaze upon the mysterious architecture of God, and witness immensity itself but a workshop of the Almighty.

The comets, as has already been said, are the creative process of the Deity, and travel through the positive and

negative forces of electricity acting in the luminous atmosphere of the sun. As the comet flies off from the solar orb, the electric charge it has received it gives off to surrounding substances, to the ether, for instance, and to the spheres in proximity to its path; and when it has parted with a sufficiency to render it in a relation negative to the sun, its motion gradually slackens, and it halts, slowly moves back, and thus returns with an accelerated motion to the electric fountain for a new cargo. Hence we observe that the period of a comet's return can never be correctly ascertained without being acquainted with the heavenly bodies adjacent to its path, and the influence they have upon it. The fewer the bodies the comet passes, the longer will be its absence, as it has nothing to which it can give its electricity but the subtile ether. This affords an easy passage for the electricity to the planets, where it salubriates the climate, and then is carried back to the sun by his revolving agent of light. By thus collecting astronomical facts, and viewing the resulting phenomena, we are led to a different view of the comets to that which constitutes "the old theory," that they will finally fall into the sun and become his fuel. It is plain, by the power of repulsion in the solar atmosphere, that it is impossible for either a comet or a planet to fall into the sun, as they would be electrified, charged and repelled before touching his photosphere. Even if we suppose a body too great for the sun to repel to fly towards him, it would not, nor could not, reach his surface; for when the sun could not repel the ponderous body, it would repel itself, and, therefore, the large body would chase the sun eternally through space. Hence it is apparent that the comets are only a creating process; for if they were permitted to travel as comets for ever, as they are continually enlarging, as seen

by the comet of Encke, they would finally reel the sun "and pluck him from his sphere."

Our system is not the only one within the circle of the universe that is furnished with comets. As they are the creative process, and the Creator is doubtless continually adding to his vast machinery, we would expect that comets were travelling in every system. No doubt the different wandering stars that have been observed in nearly all ages of the world were nothing more nor less than the comets of other systems at the *turning point*, when, of course, the tail of the comet would settle round it in the shape of a luminous atmosphere, as there would not be sufficient motion to overcome the attractive power between the nucleus and the tail, and hence it would appear as a star. Hipparchus saw one 120 B. C., and some have been seen in modern times. We have an accurate account of one which was discovered by Cornelius Gemma in 1570, in the chair of Cassiopeia, the brightness of which exceeded that of Sirius, and was visible at mid-day. At first it appeared larger than Jupiter, but its apparent magnitude gradually decayed, till, at the end of sixteen months, it entirely disappeared. It is not, however, supposed that every star in the heavens is a sun round which a distinct set of comets revolve. It is, I would suggest, more than probable that the other systems are luminous, or in other words the planets that revolve round the central sphere yet retain their luminous atmospheres. Here we set aside a little of the wonder which swells in the breast of the astronomer as he directs his instrument towards that zone of spheres, the Milky Way. He, instead of gazing at so many suns, each of which he imagines the centre of a system of unseen opaque planets, is actually gazing at the planets themselves, for their atmospheres being located at a great

distance above their surfaces appear like the sun *much larger* than they really are. But it will be asked, if those stars are planets, how is it they never change their position in the heavens? It is answered that they do, but on account of the immense distance it is not perceptible to us. This is certified by the fact, that several stars that we find mentioned by ancient astronomers are not now to be found, and several are now seen not mentioned in their catalogues.

We will now inquire the source of comets. It is now the generally received opinion that the centres of the heavenly bodies are in a molten state. That the bowels of our earth are composed of melted matter appears placed beyond doubt; and of course we would naturally expect the other bodies of the system to have a like constitution. It is nevertheless thus far certain that all the planets within the domain of astronomical criticism are more or less mountainous, and these being exceedingly elevated would in a measure force the argument that they are thus formed through volcanic agency. M. Schroeter calculated the height of several mountains which he observed on the planet Venus, one of which he estimated twenty-two miles high. None of them, it is true, showed any marks of volcanic action; still it is no less true that they owe their elevated summits to internal ejections. The moon, however, being a nearer body, affords us a more correct method of judgment in this matter. Dr. Herschel observed volcanic action on the dark side of that planet; and Lord Rosse's telescope has revealed a crater in the moon, which it is stated is from fifty to sixty miles in diameter, to which the name Tycho has been given. The aerolites or meteoric stones afford indubitable evidence of the existence of volcanic action in some of the heavenly bodies: several theories have been broached with regard to their origin; but it is now the prevailing opinion

that they are thrown from the mouth of Tycho. Taking these and other facts into consideration, we are afforded the means of obtaining some idea of the intensity of volcanic power. What a force would it require to eject those bodies, small as they are, beyond the reach of lunar gravitation, and at the same time shake the very planet in her orbit. Noted eruptions have taken place on our own sphere, and their projectile power is truly amazing. Vesuvius, in Italy, has projected large stones to the height of 3,600 feet above its summit ; and Cotopaxi, in South America, was ascertained to have thrown a rock, which was calculated to weigh 200 tons, to the distance of above ten English miles.

We will now require to tax the judgment of the reader in taking the next step. Is it not plausible that if the planets are volcanic bodies, that the sun is also ? Would we not expect that volcanic action is sometimes agitated in the sun ? Most assuredly. Then it is plain that as he is a larger body than our earth, that his volcanic violence is proportionably greater ; and hence we would not require to trespass on the domain of incredulity, if we acknowledge that the solar volcanoes are sufficiently powerful to throw a body of matter through his luminous atmosphere. It is here we look for the origin of the cometic world. If a body was projected from the sun through his atmosphere, it could not possibly ever return, for it would become charged immediately, and driven off into space. As it rushed through the sun's photosphere, the circumjacent parts of the latter would collect round it, according to the law of unlike electricities, and hence the whole would be driven off by the more distant parts. There would therefore remain a vacancy in the sun's photosphere, which could never again close, for the surrounding parts, like the distinct tails of the comet of 1744, would

repel each other. These vacuities, when viewed from our planet, appear as dark spots on the solar disc, and are by astronomers called *maculæ*. Sometimes it happens that the same solar volcano projects a second body above the luminous cloud, and therefore, as it would pass through the chasm made by its harbinger, it could have no part of the glowing atmosphere to constitute a tail. This is why we observe some comets that are destitute of that appendage. Let us suppose that an igneous mass is just projected from a solar volcano and driven through the luminous atmosphere. No sooner has it penetrated this singular substance than it is driven off by the powers of like electricities. Having been dense and compact when part of the sun, and being now under the influence of little cohesive power, and also heated by its constant attendant, the tail, it expands, and the air, previously secreted amid its particles through the great cohesive forces at the sun, now streams out from the surface, and forms a translucent atmosphere all round it, separating the sublimated aqueous substances from the igneous body. It has now the character of a comet, and flies on through space till it gives off its primeval electric charge, when it retreats again to the sun according to the law of unlike electricities, where it is again charged and repelled. Here is a young comet provided with the requisites indispensable to its growth, destined—after the cloggy wheels of ages have rolled many periods on—to become a habitable world, the abode of animal and vegetable life. This youthful comet, when it takes its first voyage from the sun, speedily returns, being small, and consequently having comparatively little velocity, and little electricity to give off before it stands in a negative relation to the sun. On its first arrival, after an absence of perhaps but a few days, it is again speedily charged, even before

completing the one-hundredth or thousandth part of a revolution round the sun, and is again repelled. Undergoing these changes, and others attendant upon connecting phenomena, it increases in magnitude and density, till it becomes able to move half way round the sun before it has become sufficiently electrified to be repelled. Finally it has so increased in volume, density, and velocity that it performs an entire journey round the sun. It has now arrived to cometic maturity, and become ready to enter upon other scenes. Returning again to the sun after this last repulsion, and completing another revolution, it has not become sufficiently electrified to be directly repelled, but moves off gradually with the repulsive force it has received in an orbit somewhat inclined from the sun, every revolution moving it still further from the solar orb—till finally, having neither given off its electricity nor received more, it comes under the government of the attractive and projectile forces, and establishes its course forever round the sun. Its tail, being no longer dragged after it, inasmuch as the force of projection is partially destroyed, settles all round it, above the surface, forming a complete luminous atmosphere and thus constituting a world in every respect similar to the one from which it sprang. The solar orb itself, it is probable, was once a comet projected from some great centre around which it now revolves as a planet. Here, it is suggested, is the origin of all the primary planets of the solar system, and mayhap of the secondary. These latter however *may* spring from the primary, as the primary sprang from the sun. If a comet which originated in the sun should pass near Jupiter, for instance, he still being in his luminous state, it is probable that that primary would act upon it the same as the sun, attract and repel it till the comet became of a certain size, when it would travel round

him as a planet ; but if this comet was as large perhaps as one of his moons, the very first time it came near Jupiter it would revolve round him without any manufacturing or preparatory process. The same might be said of the other primaries. But it may be asked, how is it that all the primary planets have not attendant satellites ? It is answered, that each may be accompanied with satellites and yet never have been discovered. It is thought by some that the planet Mars has moons, and that they are too minute to be visible. But the primordial comets may not have passed near those planets that have no satellites. It might have so occurred that those comets which may have been in their vicinity were too large for them to act upon ; or even had they attracted and repelled them the sun may have snatched them again, the primaries being so near him. It is worthy of notice that the planets nearest the sun appear to be destitute of moons. But suppose the secondary planets to arise from the primary. Remember it is not asserted that terrestrial volcanic power is sufficient to hurl an igneous mass to the moon ; if it was thrown into the luminous atmosphere of the earth, which may have been but a short distance above the surface, this was all that was necessary in the case. This being shot through the earth's luminous atmosphere would be repelled and attracted, and would continue to travel as a comet to the earth as comets now do to the sun. It is plain therefore that the larger the primary the more distant would the moon be from its surface, as the luminous atmosphere of the same would have an intensity in proportion to the size of the planetary body. These ideas do not involve an opinion that all this is the result of chance, as there can be no such thing philosophically ; they rather suggest that they are the results of the voluntary powers of the infinite God, exerted no doubt in the same man-

ner in which he overthrew the wicked cities of Sodom and Gomorrah, brake up "the fountains of the great deep," opened the earth, which swallowed the enemies of the Jewish law-giver, and rent the temple in twain from the top to the bottom. God's order is generation. Of every species of animals, he created but the originals from which all others sprang, and so of the heavenly bodies. Here is a type in the visible heavens of parental governance, beauty and happiness, the sun passing on through space, like the earthly mother through life, with her children playing round her. Having these facts in view we perceive that new worlds may be continually added to other systems whose planets still retain their luminous atmospheres—that system may be added to system, as the Creator may design. But it will now be asked, though our planets are deprived of the power of increase as their repelling atmospheres are gone, yet how is it that our sun is not as formerly adding primary planets to his system, as he still retains his original constitution, and comets are still revolving round him? Why are not those comets, like those in prior ages, becoming planets? It is replied, that our sun is either adding to his system now the same as ever, or is furnishing luminous planets to adjacent systems. The suns of other systems have parted with a portion of their luminous atmospheres, as did our sun in the creation of the planets; but, unlike it, these parts that formed the tails of comets and planetary atmospheres were never returned to them, and hence the luminous atmospheres of those distant suns are less in intensity, and consequently have a less power than ours. Their comets therefore never penetrate so far off as the verge of our system, still no doubt some of them, as I have already noticed, have been seen. But our sun drives his comets to a greater distance at the present day than those distant suns, and with

greater violence than he did before the fourth day of the Mosaic creation, as he has now a greater power, for his atmosphere is not only the share he had first at his creation, but the increase through the agency of the comets and planets before their return to him. When one of our comets has become sufficiently large to be sped before its electricity is given off far beyond the limit of our system, where gravitation would little favor its return, and the attraction of unlike electricities would be in favor of its passing to the neighboring system, it will never return. But it may yet be enquired, if our sun is unable to bring the comets back now, how did he before "the fourth day"? It is answered, that our planets were then surrounded with luminous atmospheres, and the sun was less powerful; and hence the comets were driven with less velocity, and they being nearer the planets (which were then little suns) than the great solar sphere, the former would tend to bring them back, not only by the power of gravitation, but they would not permit the comets to loose so much of their electricity as now before coming into a negative relation to the sun. It is very probable, however, without further speculation, that the sun drives the comets to a greater distance from him at the present than before the fourth day, still none of them may have passed from our system since the fourth day, as the time is but a limited period. It might be stated, that it is not the smallest nor yet the largest comet that travels the greatest distance and with the greatest velocity. The comet of 1680 is probably the fastest comet of our system. The comet of Encke is too large to be driven to such a great distance, and the period of its absence is gradually lessening. It is very probable that this fact was the cause of the opinion entertained by so many who advocated the "nebular theory." that there is a substance diffused through space out of which

stars are formed. This doctrine was strongly advocated by Professor Nichol in his *Architecture of the Heavens*. LaPlace was the first that framed this hypothesis ; and lecturers are yet occasionally strolling through the country haranguing the same story. This theory, which is sometimes called the development hypothesis, finds the original of all things in this substance, which they seem to identify with " fire mist." The igneous particles were diffused with extreme rarity throughout space, but they had in them the principles and powers of matured and replenished worlds. First of all they rolled together to make suns ; the masses of these suns, in the course of contraction and condensation, threw off zones which turned into globular bodies and became planets. As improvement proceeded, inorganic matter, imbued with electrical and other properties, produced organization ; then simple structures developed more complex and refined structures, and so progress went on to perfection, till eventually the brute developed the man."* It is nevertheless quite plain that Encke's comet has given rise to all these opinions and discussions. The fact that each successive return of this comet to the sun takes place a little earlier (about two days) than the preceding, suggested that some part of space through which the comet passes must be occupied by some substance which in a measure refuses the passage of any denser body. This is called the resisting medium. As soon as the idea was broached, the zodiacal light naturally presented itself as an argument in its favor, on account of its nebular and confused brightness. These conjectures, however, though introduced by truly great men, " have lost all their plausibility in consequence of the discoveries of Lord Rosse's telescope." It is perhaps not

* King's *Geology and Religion*.

necessary to repeat that the cause of Encke's comet moving in an orbit more and more inclined to a circle is its increase in size and density, and that it will soon revolve round the sun as a planet. It might not be improper to remark that only a few years will require to pass before this change will take place ; and as a planet in its luminous state would likely interfere with the opaque bodies in their orbits, it seems plausible that the Creator is soon to return the luminous atmospheres that were taken from our planetary system on the fourth day to their respective bodies when the millenary period will be ushered in.

According to the theory here presented, we may account for the difference in the magnitude of the planets of the solar system. There are two reasons why Jupiter, for instance, is larger than Mercury. 1st. On Jupiter's becoming a planet, the sun, having previously parted with little of his atmosphere, as there were few of his progeny in being, required that he should attain a greater size than any of his successors (in order to make one revolution round the sun). As his atmosphere decreased as his posterity, the comets increased. 2nd. As Jupiter must be so much older than Mercury, his size must be *more* than proportionally greater. We say *more*, because the sun was stronger when Jupiter travelled than when Mercury travelled. It is very probable that when Jupiter turned into a planet, that his size did not exceed that of Mercury now ; hence Jupiter's strata must be several hundred miles in thickness. I wonder who acts there as geologist. Mercury, it is likely, had settled as a planet only a short time before the fourth day of the Mosaic creation. We are certain our earth has increased in size since she became a planet ; for as the comets can not be habitable, and therefore can have no fossil remains, it follows that all the strata—from the Azoic to

the present—were laid since our earth left the cometic services, while the interior is but the original matter of the comet. The comets also increase in size very rapidly, as may be seen from the difference in the length of time in the absence of Encke's comet till its return on two different occasions. It is worthy to be observed, therefore, that the heavenly bodies increase very rapidly when surrounded with their luminous atmospheres; and hence the time which elapsed during the deposit of the strata of our globe, as she was then a luminous body, must have been a somewhat shorter period than is generally believed by geologists.

Let us now turn our attention to the axes of the comets, how they stand in relation to the planes of their orbits. When the molten mass, which formed the embryo of any planet, say Mercury, was first dashed through the sun's photosphere, and repelled, the resulting comet could have had no motion upon an axis,—it had but the projectile force. It had neither axis or diurnal motion till its first return to the sun. That side of it which was foremost in approaching the sun would of a necessity become electrified (or whatever you may call it) before the opposite parts; and when, as it were, coming along side or passing the sun to move round him, the surface foremost having received the first charge, was repelled, when the negative or opposite side was attracted, and consequently the two acting forces gave to the whole body a revolving motion. This motion, it is apparent, would increase, and when it again revolved partly round the sun, the revolving motion on its axis increased and continued to increase to a certain velocity, *i. e.*, till the surface was presented toward the sun, as fast as it was electrified. Hence if a large comet came no nearer the sun than a small one, it would not have a greater revolving motion. But the large comets do

approach the sun at a vastly shorter distance than the smaller, for they have a greater velocity; the force of gravity in the sun acts more powerfully upon them, and it requires a longer time for them to be repelled. But did not the comet which formed the embryo of the planet Jupiter travel with a greater velocity both in its orbit and on its axis than the one that became Mercury? It must have been so; for when the former travelled, the sun, as I have said, was stronger, and therefore it must have turned upon its axis sufficiently fast to present its surface to the sun as quickly as it could be charged. Again, the former ran proportionally nearer the sun than the latter, for the action of the electricities was greater, and the force of gravitation was stronger. The former, attaining a larger size, must have travelled to the sun a greater number of times, and hence its diurnal motion had an additional increase. Then this having been the case, would we expect to find that the settled comets, known as the planets Jupiter and Mercury, have the same rapidity of diurnal motion? Would not Jupiter, if what has been said is true, have a greater diurnal motion than Mercury? Most decidedly; and we are not disappointed, for "Jupiter revolves on his axis in less than ten hours, at the amazing rate of 20,000 miles an hour, a velocity twenty-five times greater than that of our earth;" while it takes Mercury, notwithstanding his smallness, twenty-four hours and five minutes to make one diurnal revolution. But up steps the sceptic, and says, how is it then that Jupiter travelled in his orbit so much faster when a comet than Mercury, when his motion round the sun is now nearly five times less? This is easily answered. Jupiter, when becoming a planet, moved round the sun and then receded from him as far as his projectile force would determine. As he again and again revolved round the sun, receding at every revolu-

tion, the attraction of gravitation almost directly opposed his recession, that is, almost directly opposed his projectile force till it became sufficiently decreased to permit the body to move in a circle. Therefore the larger the comet, the longer and the stronger it was opposed in its projectile force, while the diurnal motion was uninfluenced ; and hence Jupiter's projectile force could be no otherwise than less than Mercury's. If Jupiter travelled as fast now as Mercury in his orbit, he would speedily bound beyond the circle of our system.

From what has just been stated with regard to the origin of *diurnal motion*, it is inferable that all the planets must originally have stood with their axes at right angles to the planes of their respective orbits. This must have been the case, for their primeval cometic changes could give rise to no other. The satellites also attending the primaries must (if they sprang from them) have stood in a like position (not to the primaries, but to the sun). They are not however all so found at the present day. Jupiter and some of the satellites retain their original position with little variation. All the other planets, as far as known, have somewhat inclined through internal commotion. Our earth, nevertheless, has suffered far less from volcanic fury than most of the other planets. Venus, the moon, and, doubtless, Mars, are far more volcanic. If our earth was set aside by the Deity as the abode of happy beings,—beings for whom the Saviour died,—we would expect that those internal powers were lessened. It is not likely therefore that our earth inclined through volcanic violence without a particular interference of the Almighty.

Let it be stated, in conclusion, that though it has been urged that worlds spring from worlds, yet it does not necessarily follow, according to natural laws, that this *must* be the case. If God works by means, yet means cannot work without God.

If second causes act, they have a pre-actor. The sun would never have produced a planet, had not God desired it ; neither would a moon have travelled, had He not willed it ; for “ He commanded, and they were created ; ” “ He spake, and it was done ; He commanded, and it stood fast.”



CHAPTER IV.

THE TERRESTRIAL LUMINOUS ATMOSPHERE.

IN the last chapter it has been noticed that our earth was surrounded with a luminous atmosphere from the time of its first existence as a planet, till the fourth day of the Mosaic creation. I am aware, however, that the foregoing statements require to be *backed* with strong argument, in order that the idea may not be baffled and put down by that certain class of writers who hurdle together against the introduction of "a new theory." Geology, the favorite science of the day among the learned, will not fail to establish the above fact in the mind of the reader. Geology testifies, that during the formation of the oldest series of strata, that our planet enjoyed a high temperature in those regions which are included in the frigid zones. Sir Charles Lyell, writing upon this point, says, "It is from the more ancient coal deposits that the most extraordinary evidence has been supplied, in proof of the former existence of an extraordinary hot climate in those latitudes which are now the temperate and colder regions of the globe. It appears from the fossils of the Carboniferous period, that the flora contained tree-ferns, or plants allied to them, from forty to fifty feet in height, and arborescent lycopodiaceæ from sixty to seventy feet high. Of the above classes of vegetables, the species are all small at present in cold climates; their development even in the hottest parts of the globe is now inferior to that indicated by the petrified forms of the coal

formation. In regard to the geographical extent of the ancient vegetation, it was not confined, says M. Brongniart, to a small space,—to Europe, for example,—for the same forms are met with again at great distances. Thus the coal-plants of North America are, for the most part, identical with those of Europe, and all belong to the same genera. The uninjured corals and univalves of Melville Island [lat. 75°], and other high latitudes, sufficiently prove that during the Carboniferous period there was an elevated temperature even in northern regions bordering on the Arctic Circle. The heat and humidity of the air, and the uniformity of climate, appear to have been most remarkable when the oldest strata, hitherto discovered, were formed. The approximation to a climate similar to that now enjoyed in these latitudes, does not commence till the era of the formation termed Tertiary; and while the different tertiary rocks were deposited in succession, the temperature seems to have been still lowered, and to have continued to diminish gradually, even after the appearance upon the earth of a great portion of the existing species." Upon this point Sir R. Murchison remarks: "The great Carboniferous period is marked by the first copious and universally abundant terrestrial flora, the prelude of which had appeared in the foregoing Devonian epoch. This luxuriant tree-vegetation is also especially remarkable for its spread over many latitudes and longitudes; and together with it occurs the same *common species* of marine shells, all indicating a more or less equable climate from polar to inter-tropical regions;—*a phenomenon wholly at variance with the present distribution of animal life on the surface of the globe.*" I have formerly stated that our planet originally stood with its axis at right angles to the plane of its orbit. This will be more plainly

and forcibly shown in treating the subject of the Noachian deluge; yet it could not be said that that catastrophe caused the change of temperature indicated in the above quotations, by causing the earth's inclination; for "the approximation to a climate similar to that now enjoyed in these latitudes, commenced with the era of the formation termed Tertiary," whereas if the deluge had been the cause, there would be little or no indications of such a recent change in the strata. We now press the question, what was the cause of such a high temperature during such remote ages in those high latitudes? It could not have been the sun, if I correctly understand the teaching of the Bible, as he did not then exist as a light. Mr. Miller, and some others, however, assert—but without the slightest grounds—that the sun shone upon our earth, at all events, as early as the deposit of the Permian and Triassic periods; but did he, or can any one now living, reconcile such a statement with the teaching of the Bible? We are obliged to answer in the negative. It remains for those who hold such an opinion to show that the sun then existed *as a light to our planet*, and not only so, but how his beams could have created, at the same time, that equality of temperature upon the surface of the globe—at the equator as in the northern regions—as evidenced by the strata. It is, however, plain, and a safe conclusion—a conclusion with which I am willing to risk myself—that this source of heat was not in the solar luminary. Neither was it in the bowels of the earth, as the "tender" or "budding grass" (see margin Gen. 1:11) of "the third day" would have been blasted, or rather it could not have existed; and how could animals have then, and previously, lived? besides, a heat sufficient to create such a temperature at the surface, would have destroyed the fossil remains in the lower strati-

fications. This source of heat, therefore, must have been external, and yet it was not the sun. The temperature referred to by Sir Charles, had its origin in the same source as the light and (consequently) heat of the first day (Gen. 1:3). But who would be willing to risk himself with the opinion that this was the sun? Would even Sir Charles himself? No divine, at all events, has yet made such a statement, as he would be taking a leap outside the confines of the Bible. Well might we ask, if this source of light and heat was the sun, why is it said that the sun was made a light on "the fourth day"? But our earth enjoyed heat before the first day, as well as after on the fourth. That the surface received heat, from some source, on and before the first day, is evident from the fact that "the waters" were not congealed, for "the Spirit of God moved upon the face of the waters." From that period till the fourth day—long or short, as it may have been—terrestrial light and heat had this same source, and was equally adapted to secure a mild temperature, for the vegetable kingdom flourished on "the third day." Then it is again asked, What was the source of this light and heat? It could not have been internal, for reasons just given, and, therefore, must have been external—but where, or how situated, no one has ever explained. Dr. Clarke says, in his usual depth of reasoning, that the light spoken of in Gen. 1:3, and which continued from "the first" till "the fourth" day, was created by friction going on in the earth's crust, or rather "mixed particles"; but such an opinion neither geology nor reason can recognize. The idea is certainly as singular as it is foreign. Friction could not go on upon the surface on "the third day," when the earth produced grass and trees, neither when animals lived (as they surely did previously). It is

remarkable how the Doctor's statements work together. He previously asserts that the whole earth was covered with water on the first and second days, and then that the earth's surface was lighted through friction at the same time. The Doctor however deserves respect for making the attempt—a step which no other commentator has ever yet taken—to show that this light was the effect in nature, produced by nature's God. But this does not reply to the former questions. Indeed no reply can be given but this—The origin of light and heat before the fourth day was a *terrestrial luminous atmosphere*. I pointedly challenge any one to give any other answer that will account for, from natural causes, the light and heat of the first, second, and third days of the Mosaic creation; and which will, at the same time, answer for the phenomena of the fourth day's labor—the making of the sun and moon, when they previously existed. Nothing less can supply the demands of evidence both in the Bible and geology. This alone can account for the “extremely hot climate” in the northern regions before the present creation—so hot that the development of the vegetable kingdom, even in the hottest parts of the globe, is now inferior. It is also seen in the referred-to words of Lyell, that this temperature was uniform—the same at Melville Island, for instance, as in the equatorial regions; and the geographical extent of the ancient flora was not confined to one continent, but the same forms are traceable at great distances. It may be, perhaps, asked, If the heat of the first day originated in the existence of a luminous atmosphere, how was it that light did not attend it before God said, Let there be light. But this is very easily set aside when we consider that the atmosphere was loaded with *dense vapors*, as is proved by the Creator afterwards “dividing

the waters from the waters." This terrestrial luminous atmosphere was moved from the earth on "the fourth day," and returned to the sun. This movement was certainly a gradual process, as we have already remarked, as the water animals (which then existed) in the polar regions would have been destroyed through the sudden change from heat to coldness, though the earth stood having her axis at right angles to the plane of her orbit, the solar beams therefore spreading from pole to pole. It may be very fairly concluded that the Creator first moved the atmosphere from above the torrid zone, and permitted the sun to shine in upon those parts of the earth's surface, while it gradually disappeared from the temperate, and finally from those parts we now call the frigid zones. But will this atmosphere again return? It will as surely as there is a sun that shines. The millennial period will witness its presence, and may, perhaps, be the instrument of the Divine Being that will set the world on fire by its approximation to the surface, to purify our globe and render it a proper abode for the blood-washed throng. The day which cometh "that shall burn as an oven," (Mal. 4:1), will not be ushered in through volcanic agency, as some have supposed, as such a catastrophe would render our earth anything but what is set forth in the Bible. That this luminous atmosphere will again return, is plainly indicated in the Scriptures. The prophet Zechariah, speaking of Christ's second coming, says—after describing occurrences in connection with the scene—that "It shall come to pass in that day that the light shall not be clear nor dark; * * * but it shall be one day, * * * not day nor night, * * * but it shall come to pass that at evening time it shall be light." (Zech. 14:6, 7). The prophet Isaiah says, "The sun shall be no more thy light by day; neither for brightness

shall the moon give light unto thee." (Isa. 60 : 19 ; see also Isa. 24 : 23). That is, the brightness in the heavens above (of the luminous atmosphere) will be of such intensity, that it will hide the faces of the sun and moon ; and instead of night's ebon curtain being drawn over our world—emblem of the mantle of death—"the day shall be one" (Zech. 14 : 7, marginal reading). It is this atmosphere that shall gleam at "the second coming," and burst in upon the view "in the twinkling of an eye," rousing all creation in staring wonder. "As the lightning cometh out of the east, and shineth even unto the west, so shall also the coming of the Son of Man be" (Matt. 24 : 27). He will appear "in the clouds of heaven with power and great glory," *i.e.* in great radiance, in glowing brightness and splendor. This attendant luminous atmosphere will, not only by its interposition on its descent through space, cause changes or "signs in the sun, and in the moon, and in the stars," but it will greatly effect the whole animal race, by producing an unusual sensation and excitement, or "plexity," in the system, while, at the same time, shall be heard "the sea and the waves roaring." (Luke 21 : 25). "The stars" also "shall fall from heaven" (Matt. 24 : 29), that is, either the luminous atmospheres shall be seen rolling forth from the sun to their respective planets, or the gathering of the terrestrial atmosphere round the earth will, on account of an increasing refraction, cause all heaven to appear in a falling condition.

If our earth is to be the abode of the righteous for a thousand years, as it doubtless will be, it must be greatly renovated. The then source of light and heat must envelop the entire earth, or rains and tempests would be a natural consequence ; and remember that God never carries on war

with nature, but rather organizes it to carry out his designs and complete his purposes. That light be not interrupted by darkness, that night be forever withdrawn, nothing short of a circumambient luminary can be imagined. It will be this that shall speedily collect a fruitful soil, as of old, upon the terrestrial surface, budding and blooming the glories of unfading joys, and ambient flowers weeping "melliferous dews." The pinions of the sweeping hurricane will be lopped, the gaping volcanic mouths shall ever be closed, the angry sea shall ever be calm—all Nature's commotions shall forever cease. The frigid zones and dreary regions in a juxtaposition to the north and austral poles will be equal in temperature to the vivifying breath of the equatorial borders, and will excel in richness, beauty, and fragrance the garden of Eden. Earth will no longer be the seat of hurry, terror, and dismay;—

Sin's daughters,—Sorrow, Grief, and Pain,
In torturing years will cease to reign;
Their angry frowns will seem as Love,
Reflected from her glass above.

Angels and men shall lull the hours,
And bathe their temples with her flowers,
The depths of joy and heaven prove,
And drink the smiles of endless love.

Wiggins.

But are there any indications visible to the eye of mortals that this luminous atmosphere will return? There are. I have said that it appeared as a certainty that when it disappeared on "the fourth day," that it fled lastly at the poles: then we may expect it to appear first in those regions, that the temperature may be harmlessly and gradually raised in those high latitudes to be on an equality with the temperature of the torrid summer. And do we not find that it has

for several centuries been collecting in the frigid zones in the form of a meteor, which we call the Aurora Borealis? This idea may appear singular to the mind of the reader; still I am much inclined to think this the case. The cause of this phenomenon has never yet been deciphered, only thus far—as by M. De Mavin, Beccaria, Dr. Franklin, and M. Libes—that it is either electricity itself, or an effect produced by its accumulations in those regions. The northern lights are entirely a modern phenomenon. They were never observed in ancient times. Had they been, there is nothing surer than that David would have used them in his comparisons; at all events, they would have, in the greatest probability, been spoken of by some of the ancients, either by the inspired writers or by ancient historians. None are recorded in the English annals till the remarkable one which happened on the 30th January, 1560. The most remarkable one of which we have any account was seen in the year 1765. It overspread (in lat. 57° N.) the whole horizon in a haze of a dismal deep red or bloody color during one whole night, and its fixed appearance, together with its dreary aspect, infused terror everywhere among the people.

Does it not appear that this is the luminous atmosphere which lighted the three days' work of the Mosaic creation, and is now returning to shed its effulgence upon the completed works of the Omnipotent Creator, and which will, before the settling of the next comet, prepare our earth by enveloping it for that change. This is also strongly indicated by the height of this singular meteor. If it existed only in the atmosphere, there might be a possibility of turning aside the arrow of conviction, but it is found to be seated at the height of several hundred miles. It has been variously calculated to be from four hundred to eight hundred miles high.

CHAPTER V.

THE DAYS OF THE CREATION.

THE days of the creation has been, during the last half century, the subject of much agitation and controversy among the learned, particularly since the twilight of geological science began to dawn, and continues yet a matter of doubt and inquiry.

"In former times, Whiston, Des Cartes, De Luc, and other distinguished men, advocated the opinion that the days spoken of in Genesis were not periods of twenty-four hours, but of a vast duration. More recently, Professors Jameson and Silliman have espoused this solution of the difficulty, and have with great talent and plausibility engaged the resources at once of criticism and science in its defence.

Dr. Buckland believes that there is no sound critical or theological objection to the interpretation of the word "day" as meaning a long period; but he thinks that there is no necessity for such extension in order to reconcile the text of Genesis with physical appearances. He supposes creation to have been succeeded by cycles of ages, during which all the physical operations disclosed by geology were going on. Then terrestrial convulsion supervened and produced chaos, or literally a state of confusion and emptiness. The earth was covered with dense vapors, and darkened by them. This confusion and its attendant obscuration God so far removed on the first day as to make the light appear and distinguish it from the darkness; in this acceptance of the words, "He said, Let there be light, and there was light."

On the fourth day the gloom which had overspread the earth was not only modified but dissipated, so that the heavenly bodies came into view with all that conspicuousness which renders them so valuable to man, and constitutes them especially the signs of seasons. Thus his mandate was fulfilled: "Let there be lights in the firmament of the heaven," etc. In like manner, Dr. Buckland explains all the transactions of the days mentioned in Genesis as being improvements which followed temporary disorder; and he understands the inspired penman to describe changes which our own globe and the celestial bodies underwent, not in their own general condition, or in their connection with the universe at large, but in their relation to man and his specific well-being.

"Dr. Pye Smith has started the opinion that the recital which follows the announcement of creation may have respect to a subdivision of the globe. He thinks that the term 'earth' may have a local and restricted sense, and may be designed to express that particular part of our world which God was adapting for the dwelling of man and the animals connected with him. The history of the work of the six days is, he thinks, a description in expressions adapted to the ideas and capacities of mankind in the earliest ages, of a series of operations by which the Being of omnipotent wisdom and goodness adjusted and finished, not the earth generally, but as the particular subject under consideration here, a *portion* of its surface for most glorious purposes. . . . This portion of the earth (says Dr. Lyell) I conceive to have been a large part of Asia, lying between the Caucasian ridge, the Caspian Sea and Tartary on the north; the Persian and Indian Seas on the south; and the high mountain ridges which run at considerable distances on the eastern and western flank."*

* King's Geology.

From these distinguished geologists the illustrious Hugh Miller to some extent differs. His theory is, that the days of the creation began with the Azoic period, and terminated with the Tertiary. "What may be termed the three geologic days—the third, fifth and sixth, we find him saying, may be held to have extended over those Carboniferous periods, during which the great plants were created—over those Oolitic and Cretaceous periods during which the great sea monsters and birds were created—and over those Tertiary periods during which the great terrestrial mammals were created. For the intervening, or fourth day, we have that wide space represented by the Permian and Triassic periods, which, less conspicuous in their floras than the period that went immediately before, and less conspicuous in their faunas than the periods that came immediately after, were marked by the decline and ultimate extinction of the Palæozoic forms, and the first partially developed beginnings of the secondary ones. And for the first and second days there remain the great Azoic period during which the immensely developed gneisses, mica schists, and primary clay slates were deposited, and the two extended periods represented by the Silurian and Old Red Sandstone systems."*

Such theories, however, do not meet the demands of the Bible, and when they fail in this point they must be put down. But they do not agree with geological testimony itself. The theory of Dr. Smith with regard to the confined space in which the six days' work was performed would do well enough did not remote regions as Europe and America exhibit the work of the Deity as well as those regions of Asia; and to say that one part of the atmosphere was in a

* Mosaic vision.

confused state, loaded with smoke and vapors for some years, while the surrounding atmosphere of adjacent habitable countries was in a perfect state, is a weak and foolish argument. It is plain, however, that this statement was intended for the purpose of afterwards directing to a partial deluge. The fact is, if the days of the creation were but a few years in length, as is apparent from the reading of the Bible, and which is here insisted upon, the geologic world—the entire pre-inhabited globe—was lying in ruins when God said, Let there be light, for “the earth was without form and void, and darkness was upon the face of the deep.” This local restriction of the six days’ labor will involve unsurmountable difficulties when we come to compare with it the words of the sacred text. Such questions, for instance, occur to the mind as the following: If the atmosphere was sufficiently dense on the first day to support animals in the surrounding regions, how is it that it was of too great a rarity to support the clouds above the waters, or, in other words, to make a division of the waters from the waters? Did the leaden clouds bear so weightily upon the waters as to afford no space for the penetration of surrounding light? If so, what employed the creative hand on the second day? How did he make an expansion or firmament in the midst of the waters? According to this theory there was nothing done to the atmosphere on the second day. It could not have been increased in that particular part, and the vapors were already dispersed by “the Spirit of God” moving upon the face of the waters. This is shown also by the fact that there was light on the first day. “The third day” also presents difficulties, as, for instance, the length of time the land lay uninhabited during the third, fourth, and fifth days, a period including probably not less than fifty years. Had this been the case, the animals

of the circumjacent countries would have likely inhabited it before the fourth day at least; for on the third day the vegetable kingdom was sufficient to support them, and, therefore, there would have been no necessity for Moses to state that "God made the beast of the earth," much less to say that it was on the "the sixth day." In short, it is a fact that neither geology nor logic can possibly avoid acknowledging, without neglecting the demands of geology and the text of Genesis (which has hitherto been too much the case, especially with geologists), that our earth was the abode of animals from the time of its first adaptation to the support of organic life till a certain epoch immediately preceding the first day; that a short time previous to the first day the Creator, when he had designed to introduce a more noble creation, rendered the entire surface of the earth void of animal inhabitants, probably by the sinking of the land; that he reproduced the immediately preceding races of organic life in the very regions which that particular species had previously inhabited. Geologists may speculate, commentators may criticise, and philosophers devise, still it is quite improbable that all the inventive and discoverable light that can be reflected upon this one point will be able to clearly demonstrate the propriety of entertaining a different opinion, inasmuch as the Bible and Geology stand so allied to each other; and while this point is indicated by the former it is proved by the latter. All such questions, on which the Bible may throw some light, should be submitted to the voice of revelation, and not to allow ourselves to hold geology in greater esteem than the Bible. Though Mr. Miller says that "No true geologist ever professes to adduce his geology from Scripture. . . seeking the living among the dead," yet we contend that the first chapter of Genesis (an



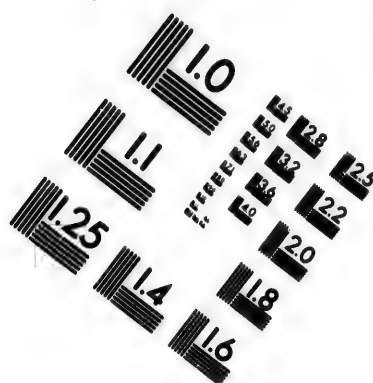
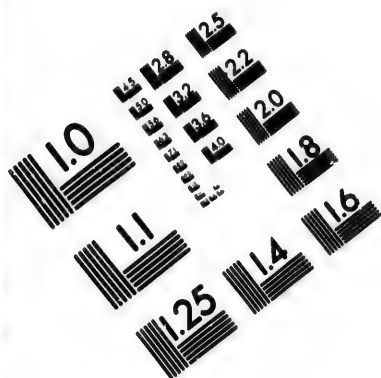
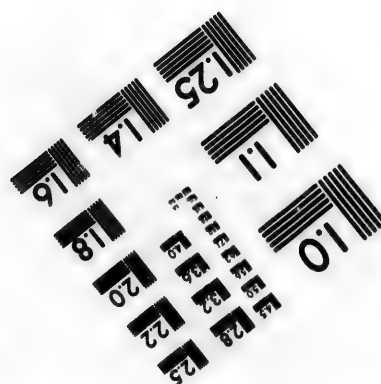
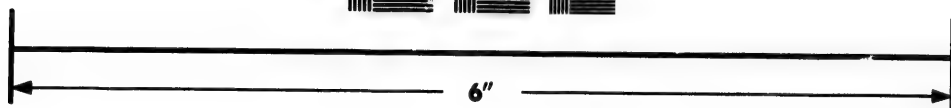
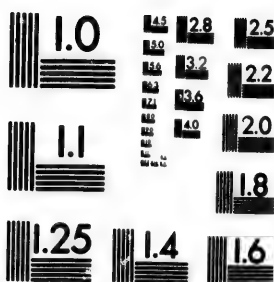


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opinion which he hoots at) is inseparably linked with geology, and can alone render, by its directions, the geologist "true," while, at the same time, it teaches a lesson, which Mr. Miller would have done well to have learned,—a lesson that is destined to shake the foundation of his *reconciling theory*. It is a fact that this very bias of his mind, against the idea that the Bible had any reference to geological facts, was the sole cause of his failure, in endeavoring to reconcile the two testimonies, Mosaic and geological. He minutely examined the latter, and took a turning glance at the former. The science of geology we cannot set aside in the dark, as many have tried in vain to do, neither do we wish to deny it, still we are unwilling to leave the Bible with the idea of getting a better guide in tracing some points, as the days of creation in geology. Geology is a most glorious science, but its early advocates have been rather too eager in the matter. Some of the most distinguished, through attachment to their favorite branch, in order to make it the more conspicuous, have pared down the word of God, and placed it, with regard to some points, in a smaller compass than theological criticism will allow. And the Noachian deluge, for example, that it might not disturb the leaves of "the petrified book," they have made out but a trivial affair, extending over but an insignificant spot of the earth's surface, thus paving, under the pretended piazza of the Bible, the way for succeeding infidelity and scepticism, too well exhibited in the writings of the once celebrated but now distrustful, and should I not say pseudographic, Dr. Colenso.

Geology, however, among sciences stands towards, if not at the head of the list. None reveals more wonders and beauties, more wisdom and simplicity, more truth and error. None more ably vanquishes infidelity, confuses the sceptic,

and corrects the divine, destroys the domain of *ad infinitum*, and warns of the existence of a God. None furnishes a greater clue to philosophy, a more well defined, concatenated train of witness to revelation, and on the whole a more excellent comment to the first chapter in the Bible. It even ventures to step back behind the circle of human chronology, and to raise with its fossil finger the dark curtain of primeval gloom, and gaze with unclouded eyes upon the embryo of our present globe. Other sciences may point, but this is all; they venture no farther.

We will therefore consider geology among the sciences as worthy of our nicest inquiry, and fondest contemplation; still in the subject we are now discoursing we will admit it only as secondary when laid at the side of the Book of books. It would be quite improper, in matters of such infinite moment, to overhaul the leaves and scrutinize the pages of "the petrified book," when the dusty Bible is lying closed upon the shelf. We would rather consult the latter, and reflect the light of the former upon it. Let the pages of Divine Truth take the lead in the question, while we march the ranks of geological fact to support, strengthen and enlighten on the rear. Let us, where revelation directs, call geology to give us its walking-stick, that the way be more securely and speedily travelled. When the beams of the biblical sun, by intervening cloud and mist, become darkened, geology is in many instances worthy to breathe them away. Let us in no case invert the matter without a strong reason for the change. If we follow this course there will be little danger of falling into error.

Geology is doubtless as true as the Bible. The same hand that inscribed "the tables of stone," also indited the fossil characters of the geologic book. The deficiency remains

only in the interpretation. If Gabriel would apply his thumb to the leaves, peruse the volume, and explain the difficult passages, we could have no record more correct and expressive. Because geology has been and perhaps still is denounced and ridiculed "by those whose ignorance cannot excuse their presumption," it does not follow that it is a *hoax*. The Bible itself has been in former ages avowed as an imposition, and of late it has been violently assaulted. The pentateuch has been put down by Dr. Colenso as fictitious and not "historically true." It need however only be said in this place that there has been as yet no argument furnished either by him or any infidel that has ever cast a shade of doubt upon the authenticity of the Bible. We believe it to be the word of Divine Truth, and will continue to believe it—that it was written by the direction of the Holy Ghost, and that every writer was divinely inspired. If it was written with ink, it was also with the spirit of the living God.

Who can read the first chapter of the Book of Genesis without a feeling of admiration? What harmony and order are there blended! How it smooths the delighted mind as it spontaneously wanders upon the ample field! Well might the poet exclaim, "Order is heaven's first law." And where can we find a more admirable witness to this truth than in the days of the creation? Could we summon the heavenly bodies to the bar of inquiry,—had we a voice that would command the twinkling tapers of heaven to assemble before us or call down the sun from his fleecy throne,—could we there find written across their glowing countenances a more glorious catalogue of the harmony, beauty, and order of the Divine Being? If order is emblazoned in starry coronals upon the cerulean canopy, and diamonded in unmistakable characters upon the rosy portals of the succeeding

vernal seasons, it is here written in tablets less perishing, delible and waving. If the Creator is pointed out even by the smallest spire of grass that lifts its tiny head in the broad plain of Nature, He is also here indicated by the markings of His finger. Order, superhuman order, is traceable in every creative step of the Deity. "How marvellous are thy works! O God, in wisdom hast thou made them all!"

How closely allied to each other are the days of the creation. On a close examination it would appear that the planes of Heaven had fitted them together with tongue and groove. Every creative step, though it seemed purposed only for a particular object, yet it was indispensable before the next could be taken. The work of the second day, for instance the renewing of the atmosphere, was necessary before the land and water were separated. The tides, as there was less pressure upon the water than on the third day, would likely have been sufficient to deluge the continents had they been raised to no greater height than now; and even if they had been raised to a great elevation, it would have been useless, as they would never become dry till the waters were divided from the waters. Everything was done in the nicest mechanical order. The animals were never introduced upon the stage till their food was in a state of perfection. Nothing was called to dine before the table was set. Before man appeared, everything seemed to feel his absence, though nothing had yet witnessed his presence. Nature, it would appear, seemed sufficiently anxious to ask for his creation; and so complete and perfect was the order, that though God had created a world, yet it required *à reb* to finish it; woman, therefore, appears upon the stage, and heaven claps her hands at the bloom of a new creation. So perfect are the works of God, that there can be neither addition nor abatement.

Everything is no more nor no less than complete. If one day was taken out, all else would be imperfect, or in ruin. Take away the result of the first day, the second, third, or fourth, and all else is vanity. If the atmosphere was destroyed, no life could survive. If the land was deluged, no walking specimens of Heaven's wisdom could be seen, and, therefore, the sun would be scarcely necessary, as the lunar sphere would answer to the watery creation as the orb of day. If we take away the works of the fifth and sixth days, all the preceding will be to no purpose ; had these been wanting, Heaven would have failed in her object.

The length of the days of creation, as recorded in Genesis, as before remarked, is not, and cannot be definitely known. We admit, however, with Whiston, De Luc, Miller, and others, that the term day, in this place cannot be restricted to the short period of twenty-four hours. This idea originated in the fact of the mere presence of the term. But there are in the Bible a number of instances, in which the term day is used to indicate an indefinite period.* We ask, then, is there anything to justify the belief that the term day here used is limited, as we at present use it? What is it that measures and defines the day? Is it not the sun? Was he not made "for the rule of the day"? Then what measured the first, second, and third days, before the sun was seated on his diurnal throne? In fact, was there any such thing as day, or any such thing as night, according to our acceptations of the terms, before what we call the "fourth day." It is true "that the

See Psalm 84 : 10 ; Amos 6 : 3 ; Zechariah 4 : 10. The Saviour used the word day in the same sense. Matthew 6 : 34. John 8 : 56. I Corinthians 3 : 13. Philippians 1 : 6. Day of judgment, Matthew 10 : 15. Day of the Lord, Isaiah 2 : 12. Day of trouble, Psalms 20 : 1, 50 : 15, 91 : 15, 59 : 16, etc.

evening was, and the morning was," (margin,) or as it is in our translation, "and the evening and the morning were," &c. which is used at the close of every completed period, would dispose to such an opinion. Still, such was not the case, see Exodus 12:6 (margin). There was no division "between the day and between the night, till after the fourth day, for this was one office of the then made luminaries, *i. e.*, "to divide the light from the darkness." There was, therefore, no such thing as darkness from the first till the fourth day, and indeed till the sixth day. This is also shown by the fact that the Creator rested or rather *desisted*, not till the seventh day, and as He in whom there is no darkness at all required light before he commenced to organize the present order of things, it follows that it was continued day from the commencement till the termination of his works. The six divisions were marked by the maturity or perfection of the Creator's works, as expressed in the appendage "and God saw that it was good." This is strongly indicated in the third day, when it is not added that "God saw that it was good," or "and the evening and the morning was the third day," till the trees brought forth fruit. The original does not confine the translation to day, but to *period*. Also the six days are spoken of in the second chapter as one day. Peter tells us that "one day is with the Lord as a thousand years, and a thousand years as one day." II Peter 3:8, Psalm 90:4. It is hence plain there is not the slenderest reason for the belief that those days were as ours. But there are other considerations that will put the question at issue beyond doubt. For instance it is beyond probability that the Creator made only two of every species, a male and a female among the lower animals, as he created but two of the highest. Now we read, that the Lord God made coats of skin for Adam and Eve after the fall,

(Genesis 3:21). The word, however, is in the singular in the original, and hence only one beast was slain, and yet its skin was large enough to clothe them. The beast, then, must have been full grown, as it was doubtless a clean beast, which had just been slain for sacrifice. But we conclude that Adam and Eve were but a short time in Eden, for two reasons; first, had they been there a twelvemonth, the command, "Be fruitful, and multiply," &c. would have been fulfilled; second, it appears from Genesis 3:22, that they had not yet eaten of the tree of life. This was the opinion of Lord Byron, as we find in his "Cain," who scornfully to Adam said—

"And wherefore plucked ye not the tree of life?
Ye might have then defied him."

This shows they must have been but a brief period in Eden or they would have indulged the liberty given in Gen. 2:9. Then the beast must either have been generated and have grown on the sixth day, or the species was destroyed. But again, the fourth day must have been several years in length, as the changing of the source of light and heat from a circum-ambient sun to a mere spot on the heavens, could not, without a miracle, avoid destroying every department of life upon our planets,—fish were then in existence,—had it been effected in twenty-four hours, or even in twenty-four days. The third day also must have been a period of several years, for on that day the land was raised out of the water, and the trees grew out of the ground, and bore fruit before the close of the day. Now all this took place certainly not in twenty-four hours. It must have required several days for the land to dry after its emergence, and even the sprouting of the vegetable kingdom was not completed in a day. But the trees grew to their natural size, and bore fruit which must have required several years, for it is in no way probable that they were like Jonah's

gourd. It may be that the age at which the Hebrews were permitted to pluck the fruit of the tree, had reference to the age of the trees of the third day. The fifth day, it is also observable, must have been quite a lengthy period, for "the waters brought forth abundantly," or, in like words, the animals in the water multiplied greatly from the beginning to the close of that day. But we have only suggested the limit on one side of the question. Let us now look at the other; we find extremes in both cases. Some seeing that the days of the creation could not be confined to twenty-four hours extended their limit as far as the cover of "the petrified book." They were, however, not the lengthy periods, as is urged by Mr. Miller. The Bible was not revealed to man for scientific purposes. It neither teaches nor professes to teach anything of the kind. It treats only upon what is necessary to temporal and spiritual happiness. We would truly be taking a circle far outside the limits of reason, did we ascribe to the Bible the history of the geologic ages. The Jewish lawgiver, when he wrote the first chapter of Genesis, had no other end in view but to show to the house of Israel, that their God, in contradistinction from all other gods, was the creator of all things, that all existing sublunary things are the works of His hands. Science was not the object or design of the Author. "The Scriptures were not written to gratify our curiosity, but to excite us to admire and to adore." Hence what is there written, has reference solely to the present creation. It is not the object of revelation to teach anything but what stands in intimate and strict connection with spiritual things. All that was necessary in the case was to show to the house of Israel that their God was their creator, the origin of the human species, and that upon His mighty arm hung all hope of future happiness. It was taught them in the Pentateuch.

The first subject that presented itself to the mind of the inspired penman, was, of course, according to the natural rule of delivery, that which stood first in the facts to be related, namely, the origin of the heavens and the earth. He then goes through the order of creation, showing when each separate species originated, and by whom. It is evident, therefore, that when Moses tells us that on the third day the earth "brought forth grass," that it was for the very purpose of supporting the animals which were about to appear in their turn. Take away the order of creation, and you take away the most precious gem in Heaven's catalogue. Mr. Miller, however, thinks that the grass and trees which the earth produced on the third day, were not exclusively for the support of the animals contemporary with man; but it is worthy of notice that the expression "tender grass," or "budding grass,"—as in the margin, Genesis 1: 11—would militate greatly against this opinion. "I have already referred," we find him saying, "to the sombre, unproductive character of the earliest terrestrial flora with which we are acquainted. It was a flora unfitted, apparently, for the support of either graminivorous bird, or herbivorous quadruped. The singularly profuse vegetation of the coal measures was, with all its wild luxuriance, of a resembling cast. So far as appears, neither flock nor herd could have lived on its greenest and richest plains; nor does even the flora of the Oolite seem to have been in the least suited for the purposes of the shepherd or herdsman. Not until we enter on the Tertiary periods do we find floras amid which man might have profitably labored as a dresser of gardens, a tiller of fields, or a keeper of flocks and herds. Nay, there are whole orders and families of plants of the very first importance to man which do not appear until late in even the Tertiary ages.

Now who that studies the "Testimony of the Rocks" and Bible could be satisfied with Mr. Miller's statement in his Mosaic Vision, that the Carboniferous period was the third day of the Mosaic creation? Does not the Bible tell us emphatically that the earth brought forth grass, and trees that bore fruit? How does this correspond with the vegetation of Mr. Miller's third day,—a vegetation on which "neither flock nor herd could have lived." Will any one who holds with the above gentleman show us the propriety in Moses telling us anything about the fruit-bearing trees and the "tender grass," when the whole was "unfitted for the support of either graminivorous bird or herbivorous quadruped?" Who but he who undervalues the Bible will deny that the inspired writer intended to show that this vegetation, which he includes under the terms "grass" and "trees," was the prepared food for the animals that appeared on the succeeding days? But how did it happen that Mr. Miller's third day had no fruit trees? Only because his third day was not "the third day." The single phrase "the herbs yielding seed" will irresistibly explode Mr. Miller's theory of the days, if there was not another point of argument, for the Carboniferous possessed no "herbs yielding seed" but simply "flowerless and seedless algæ;" and it might be remarked that the expression "the fruit tree yielding fruit whose seed is in itself," shows that the Carboniferous period must have possessed fruit trees that bore fruit containing seed, such as the apple, the fig, the peach, the plum, etc. Terrestrial vegetation, he informs us himself, existed long before the dawn of the Carboniferous age. Then the third day must have extended back as far as the middle of the Silurian system, for if we are to believe the Bible, there was no *dry land* in connection with our creation that flourished vegetation before the third

day (see Gen. 1:9); and even had there been dry land before, it could not have produced anything, as "the waters" were not divided "from the waters" till the end of the second day. If we are to find the record of the third day in the strata we will be obliged to extend its limits from the earlier part of the Silurian period to the latter series of the Tertiary; for vegetation commenced in the former, and new tribes of vegetables were continually introduced till the Tertiary period was complete. This day, therefore, of itself, will "exhaust the geologic scale." It must be remembered that the third day's labor, if I may so express myself, terminated before the commencement of the succeeding day, "and the evening and the morning were the third day."

But again: according to the text there could have been no land animals nor "fowls that fly" living upon the earth during the third and fourth days, as they were not made till the fifth and sixth days, whereas the former existed during the deposit of the Coal Measures, and the latter before the time of the Oolite. But it might be argued that the fowls which existed during those remote geologic ages did not "fly"—that they were wingless as the *apteryx mantelli*, or as the ostrich which, though it is provided with a sort of wing, yet they are insufficient to support it upon the air. We know, for instance, that in New Zealand there once lived wingless birds, such as the *dinornis* and *palapteryx*, that stood from six to twelve feet high. But it does not follow that because there were such birds then existing, that there were no soaring birds, any more than it follows that because there are now the latter, that there are none of the former, or *vice versa*. In fact, it is found that when those very birds existed, there existed also a species of crane—a volatile bird—as learned by the foot-prints in the valley of Connecticut, and which even rivalled

the hugest birds of the geologic ages, some of them having stood to the height of twelve feet. But the term "fowl" which occurs in Gen. 1:20, is not restricted exclusively to the bird family. It includes all winged animals. "The word fowl," says Bagster, in commenting upon this passage, "derived from the Saxon *fleon* to fly, denotes every thing that flies, whether bird or insect."* In the times of the Oolite there were flying dragons (belonging to a species that existed long before), having a body as large as that of an ordinary mammal, armed with jaws and teeth as huge as those of the crocodile, and driven through the air upon wings having sometimes a spread of twenty-seven feet. Clouds of insects floated through the air as early as the Carboniferous period. Now if there were "fowl"—flying animals—that lived on the third day, will any one give a reason why the Bible refers their creation to the fifth day? Mr. Miller's theory of the days—the only point that appeared to gleam forth a prospect of reconciliation between "the two records, Mosaic and Geological"—will do very well for those who place little or no confidence in the sacred record, but it will certainly not stand the test of the theologian. Such an interpretation of the text of Genesis can acknowledge no such thing as perfection in respect to the days themselves. The vegetable kingdom, according to his theory, had not the slightest mark of perfection on the third day, either with regard to its nutriment or its completion. I see no reason why the origin of any vegetable department should be referred to an earlier or later date than the third day. But we find that the order of the Rosaceæ,

* Reptilia and batrachians existed as early as the time when the Lower Carboniferous and even Old Red Sandstone strata were in a course of deposition, as their tracks on those rocks in Nova Scotia and Pennsylvania evince.—Hitchcock's Religion of Geology.

for instance,—an order “to which the apple, the pear, the quince, the cherry, the plum, the peach, the apricot, the victorine, the almond, the raspberry, the strawberry, and the various brambleberries belong, together with all the roses and the potentillas”—were introduced when the Tertiary age was about closing. Mr. Miller, it appears quite plain, conceived that all these as they appear in his sixth day, were created in and for the garden* of Eden, from whence they spread over the entire earth. It is true that if they were created on the sixth day at all, as Mr. Miller makes out, they must have been exclusively for “the garden.” But we very much doubt that the trees of the garden were created then. It seems plain that the same species must have existed since the third day. In the first place, when was the garden of Eden planted? It was after Adam’s creation. Had Eden existed before Adam, it is not likely that it would read thus: “And the Lord God planted a garden eastward in Eden, and there he put the man whom he had formed” Gen 2: 8. If the verb planted, in the first sentence, was in the perfect tense, we might be able to conclude that Eden was ready or in preparation to be ready for man’s reception at his creation, but as the text now stands it will not bear such a view. Had the garden of Eden been flourishing when Adam appeared, it is beyond probability that he would have been created there, but he was not, for he was “put” there—led there, perhaps, in the same manner as Eve was led to him, as represented by Milton,

“Led by her heavenly Maker, though unseen,
And guided by His voice.”

He was placed by the Creator in this delightful garden “to dress and to keep it.” Mark the word *keep*. Was it not

* Mr. Miller makes this statement—Testimony Rocks, p. 44.

here he was to exercise that authority which God gave him—"dominion." Is it not altogether probable that the garden would have been, if not destroyed, unable to support him as the Creator designed, had he not kept away the lower animals? The birds, especially, must have required watching, and it is very plain from this circumstance, why the Hebrew names of birds are so descriptive of their respective notes. But what "kept" Eden till Adam's arrival, if it existed before him? Adam was only to keep Eden in as good a condition as when he came there. These and other difficulties can be set aside only by the conclusion that Eden was prepared after Adam's creation. But on what did Adam live till the trees of the garden grew and bore fruit, which must have exhausted a period of at least seven years? It is answered that the very same "kind" of trees which grew in the garden grew also throughout the whole country of Eden, long before Adam's creation. This is plain from two considerations: first, the garden of Eden was planted; the trees were of a pre-existing stock, and must have grown from the seed—Gen. 2:9; secondly, had the garden of Eden been the only spot on earth that contained the different kinds of fruit mentioned in the above quotation, it would have been the resort of swarms of animals, which would have stripped it of its nutritious dainties, and dined at the bounteous table of Adam, notwithstanding his endeavors "to keep it." Not a grateful berry would have been left to bathe with its juices the smiling lips of Eve. The garden then would have been a garden of annoyances and trouble rather than "a garden of pleasure." It is indeed very probable that no new trees or species of trees were introduced into the garden of Eden, save "the tree of life, in the midst of the garden." But if this was the case, why was there any pre-

pared garden at all? It is replied that the garden was planted for the purpose of testing the obedience of our first parents, where they might eat of the tree of life and live for ever, as long as they continued obedient. Had there been no garden there would have been no tree of life, for the only one that existed was the one in the midst of the garden. Dr. Kennicott, however, labors with much ingenuity to prove that the tree of life was not only one tree but a species. But there could have been no other at all events known to Adam before or after, for he was driven out of Eden for the very purpose that he might not eat of it. Man could not have lived for ever any more than any other animal, had not this tree been accessible to him; God wished to reward him for obedience, as he rewards all those that keep his law—with continued life. Man was also placed in the garden of Eden that he might have some employment, which is indispensable to the happiness of created beings. Bishop Horne and some others argue that it was also a garden of instruction. The order of the Rosaceæ, therefore, we gather from these facts, must have existed before the garden of Eden. The word Eden itself strongly urges to this conclusion. Its primary meaning is "pleasure or delight." Did not this order then flourish in Eden before the "garden eastward in Eden" was planted? It is also worthy of remark that the animals of the Adamic creation, if we are to believe the Bible, subsisted on the "green herb";* they were not fruit-eating animals, that

* It might also be stated, in order to prevent this point from being cavilled at in one particular, that the herb which God granted to man as food in addition to the "trees" was identical to that granted to the beasts, though they are spoken of in somewhat different terms. Thus to man he gave "every herb bearing seed" verse 29, and to the beasts "every green herb"; verse 30, but in verse 3 (chap. 9) they are shewn to be the same.

is, while the "herb" and the "tree" were given to man, so the "herb" was given to the inferior animals, verses 29, 30 (chap. 1). Then for what purpose were the fruit trees that we read of in v. 12. that were created on the third day? Must they not have been exclusively for man? Why not? For what was the "grass" intended? Was it not for the animals that appeared on the sixth day? Well, might not God create the food of man two "days" before his appearance as well as that of the other animals? They were all created on the sixth day. Then who will deny that the order of the Rosaceæ then existed? In fact, who can deny it and believe the Bible? But how will this work with Mr. Miller's theory, that the Carboniferous period was the third day, or that the Tertiary was the sixth day? There is apparently no alternative. If the fruit trees that sustained our first parents did not exist as a species during the Carboniferous period, that period was not the third day. But they appeared no earlier than the times of the Tertiary. Then the third day of the Scriptures was no earlier than the latter part of that period.

In addition to what has been said it might also be remarked that the term "grass," which occurs in verse 12 (Gen. 1), presents a decisive argument in favor of the opinion here advanced,—an argument which Mr. Miller himself would have had some difficulty in surmounting. That the word *grass* is correctly used in this place is seen from the original. Many terms in the Bible, it is true, often communicate an idea quite foreign to the true meaning, still it does not so happen in this passage. It might be thought by some critics to imply the tender shoots of the various parts of the vegetable kingdom; but that this is not its proper signification is apparent from the mentioning of the "herbs" and "trees" in distinction

in the very same verse (Gen. 1:11). "But the grasses," says Mr. Miller, in the *Testimony of the Rocks*, p. 96, "scarcely preceded man in their appearance.... at least any period of time appreciable to the geologist." It follows therefore that the third day of the scriptures could have been no earlier than this testimony of the strata. It appears very plainly that the inspired writer intended particularly to show in verse 12, that the Creator had prepared food for man before he created him, and that the vegetable productions which God granted him as food were the same as created on the third day, for they are spoken of in relation to their seed in terms having the same signification as in verse 12. In the former it is said "the fruit tree yielding fruit whose seed is in itself" in the latter (verse 29), "every tree in the which is the fruit of a tree yielding seed." The text relating to the "herb" makes this still more apparent, for as man is higher than the beast so it is referred directly to him. In the former (verse 11) it is included in these terms "the herb yielding seed" in the latter (verse 29), every herb bearing (seeding) seed." Observe also that it is said (verse 29) that God *gave* these to man for "meat," as much as to say they were in being before him. These must therefore have belonged to the order of the Rosaceæ, as that order was contemporary with man, and which obviously was his "meat;" and that they were not confined to the garden of Eden is plain from the passage that the herb was given to the "fowl," the creeping thing and the beast of the earth, all of which were not in the garden. Observe also that the "every herb bearing seed" was "upon the face of all the earth."

If we acknowledge Mr. Miller's theory of the days of the creation, we will find no tinge of perfection in any of the Creator's works in any department of the vegetable kingdom

as exhibited in them. Not one of the so called geologic days stands complete by itself, but blended with the previous and the succeeding, and in fact more than that. The third day—if we are to believe the Bible that the vegetable was then completed in its creation—must have ranged from the middle of the Silurian period to the very close of the Tertiary, comprehending therefore the greater part of the second (the Silurian and Old Red Sandstone), also the fourth (the Permian and Triassic), the fifth (the Oolitic and Cretaceous), and the sixth (the Tertiary). His fifth day has, in like manner, its difficulties. Reptiles which inhabited “earth, air and water” had their existence long before the dawn of the Oolitic period (the first part of Mr. Miller’s fifth day). It is true they then received their “fullest development in creation;” still they were in being as early as the times of the Coal Measures (see Testimony of the Rocks, p. 105). This fact therefore will furnish no clue for the idea that the Oolitic was the former part of the fifth day, for the Scriptures pointedly tell us that they were made—had their first existence—on the fifth day, (as far as our creation is concerned) and therefore could not have had a prior being. Insects also, as before remarked, existed as early as the Carboniferous age (the third geologic day). Moses must have witnessed, if the creation was presented to him in a vision, the Creator making the fowls, *i. e.*, all flying animals out of the ground, or how could he have thus testified (Gen. 2 : 19) ? Again the fish, which the Bible refers to the fifth day, those species which are adapted to the support of man, did not appear till the very close of the Tertiary period, and therefore had no place in Mr. Miller’s fifth day. “As there are orders of plants,” we find him saying “such as the Rosaceæ and the grasses that scarce preceded man in their appearance, so

there are families of fishes that seem peculiarly to belong to the human period.... the Gadidae or cod family — that family to which the cod proper, the haddock, the dorse, the whiting, the coal fish, the pollock, the hake, the torsk, and the ling belong, with many other useful and wholesome species, did not precede man at any period appreciable to the geologist. No trace of the family has yet been detected in even the Tertiary Rocks." The fifth day of Mr. Miller therefore demands a more extended limit, not including a narrower limit than the Old Red Sandstone as its beginning, and the "top stone" of the Tertiary for its end. His sixth day exhibits a similar contradiction. As early as the times of the Oolitic there were land animals, and in fact as early as the Carboniferous period. But who would dare to reconcile this fact with the text of Genesis, or rather who could do it? No man can possibly twist the text, wrenched as it has been by scientific writers, to acknowledge these geological facts as having anything to do with the sixth day of the scriptures. The Tertiary age, Mr. Miller reckons as the sixth day, when he saw at the same time that land animals were created long before the hand of time had even sealed the fourth day. Any one who will take the trouble to read Gen. 1 : 25 can see for themselves the impropriety of the land animals of the Mosaic creation existing before the sixth day (see also Gen. 2 : 19). As before asserted, there is no perfection in these geologic days, and in fact no scripture. Mr. Miller argued that the Scriptures "do not fix the antiquity of the globe;" still it appears from his geologic days that he strove valiantly to attribute to them the geologic chronology. If we have a correct view of the matter, the work of every day was a perfect completed work, "and God saw that it was good." But how shall we consider the days of the creation, and with

sober, unwavering pace walk with the Bible? Never can we understand the story of Genesis without placing the geologic ages—the Tertiary period itself—in the rear,—before the first day of the Mosaic narrative. We can then have a clear view of the truth of Revelation, and the design of the Creator in revealing the order of creation to the inspired lawgiver. We will also discover its relationship to geology, and be enabled to peep through the holes in the curtain of Genesis, and behold the works of a long-ago working eternal God. Over the vast landscape of almost eternal and yet limited eons we can scan—as we look through the glass of Genesis, and on through the smoky ages of the geologic periods—the wisdom and the power of Him who is the God of the universe. Where is the man of thought and feeling, where is the Newton or the Cicero, that can calmly turn his eye to the first page of Revelation, and considerately look through this misty van of ages without a feeling of emotion! It is true that the Bible does not teach nor profess to teach geology, yet it directs the mental vision to the geologic scene. Here the anxious mind, such as the illustrious Miller's, may dare to venture, and upon the fixed pinions of eager inquiry wander through the portals that open from creation to creation, and gaze with fervent eye upon the rise, the fall and the decay of former worlds. Than to soberly ponder and look into the past condition of our planet, nothing is more elevating to the human intellect, nothing has a greater tendency to awaken the soul from its slumbers and startle it in wonder, and impress the existence of a God; and yet nothing more fully demonstrates the littleness and yet the greatness of the human species.

CHAPTER V.

GEOLOGY REVEALED IN THE BIBLE.

THE question now presents itself, is there a passage in Genesis, or any other book of the Pentateuch, that has the least reference to past terrestrial creations? If we were to accept of nothing more than has yet been said by commentators and other critics of Genesis, we would be obliged to answer in the negative. Indeed, the most learned men in all ages—singular as it may appear—have made comparatively little inquiry into the meaning of the first chapter of the Pentateuch. It is very seldom we meet with a comment that deals to any great length with the history of creation. Whether it is because that some have harbored the very groundless idea that this part of the Scriptures is not necessary to be looked into in our day, or that it is merely the introduction of the Scriptures, or what? it is certain that commentators have considered it a subject of little interest, and made it one of but superficial inquiry. Not a man has ever yet affirmed, and with his affirmation shown, that there are passages in the Bible that cannot be understood without directing to geology for explanation. It is true there were some in the earlier part of the present century who professed to deduce geology from the Bible, still they recognized no reconciliation between them, but rather denied that there were any tangible grounds for a reconciliation. It is, nevertheless, here affirmed—rigid and wild as the assertion may appear—that *there are* texts of Scripture that cannot be

viewed in a proper light and thoroughly understood without acknowledging that our earth was the theatre of at least one creation before the dawn of the first day of the Scriptures. If these passages are here pointed out, will it not, or rather ought it not to be acknowledged that it is a demonstration of a reconciliation between the Bible and Geology. This was a point Mr. Miller strove very valiantly and zealously to discover—a point which he missed only by his too much neglecting the Bible, and perhaps sacrificed his life to his failure. Alas! his brilliant mind was too tenacious to its noblest theme! This noble Scotchman, however, of all the men that has ever lived in modern times, has raised the greatest barrier to the advancement of infidel principles. None ever argued more faithfully and candidly; no man has ever made a more successful invasion of the territory of the sceptic, and none have ever left behind them a more signal foot-print on the sands of time. If he strove to hook the geological car to that of the Bible, and in a measure failed, his cannonade had the no less effect upon the enemies of the Christian religion. If he delighted in reading the bosom, shall I say, of his mother earth; and sang the song of melody on the banks of her rippling rivers, there was at the same time flowing from his delighted pen a stream of undeniable argument, tinged with the ink of immortality. If he mounted high upon the wings of eloquence and thundered forth his sentiments across Atlantic's wave, he never soared too high to breathe conviction to the hearts of his hearers. If ever there was a name that is emblazoned upon the portals of time, and that will warble on upon its zephyrs through succeeding ages, that name is Miller. If divines have struggled in the field and opened all their efforts to quell the flooding torrents of atheism, the hero of the north has com-

pleted the victory. But he has since reposed upon the arms of death, and though we differ in our views, yet God forbid that I should cast a shade on the brightness of his honor. If there are in this chapter any marks of a directer line to "reconciliation," it is humbly acknowledged they are made only by the pebbles he omitted to pick in his path.

Some doubtless will consider it a most daring assertion, that we should study geology to have a clear, cloudless view of even a few points in the Scripture text. Did not the Jews, it might be asked, understand it? But what would such persons say, if we should interrogatively reply, Did Moses himself understand every particle of the revelation of Heaven to him? If Daniel did not, might Moses not? Might not Moses, like Daniel, have "heard but understood not," or might he not have been guided in his writing, and yet not understand? It is a question. If we are to believe that he wrote as he was "moved by the Holy Ghost," it is possible and even probable that he indited what he did not thoroughly understand himself, no farther than the object in view. This idea will surely be "snapped at" by subsequent writers, still it requires decisive argument before the point at issue can be honestly rejected. The "drama" of the revelation of "the six days," notwithstanding the able pens that have advocated in its favor, is far from being admissible. It will require more light than has ever yet been reflected upon that point to make the opinion palatable. But why should we not summon witnesses and explanations from the bowels of the earth as well as from the ruins of ancient cities? And if it is necessary, for instance, to study the manners and customs of Eastern countries to understand a great number of passages in the Bible, why not anything else that would disclose any new feature in the text? The Bible was,

must have been written, by the finger of inspiration. It is adapted to all people, to all climes, to all ages. Let science move on as far or as fast as it may, the sage can look from his car and yet see the Bible ahead of him. We may expect, therefore, that future ages will discover in it something new. It was not only revealed to Moses for the children of Israel, but for the children of the nineteenth century; to teach the divine and humble the geologist. If it does not tell us of the Azoic period and of the Silurian, it is only because that Heaven's finger wished to mark an earlier date, and hence wrote of the "beginning." From this word till "the first day" it leaves the space which geology may tell us, when its fossil tongue would be silent, if to speak on the other end of the Bible. Geology reveals us a past day of wonders, but they are only temporal; while the big Book tells us not in fossil characters but in intelligible language, that there is hastening a day far more wonderful. The Bible includes Geology in its very pages. It has left a space for it. From the beginning to the first day, nothing is said. Here is the field of the geologist, and who will dare to deny him his right? But there is a certain class of ignorant men who assume the title of "preacher"—a title honorable to the man who is qualified to hold it—who stroll through the country professing to know and to have the ability of teaching the Scriptures, the difficult portions of the Old Testament being the first they sometimes pitch into, when they have at the same time, not to say anything of Scripture or ecclesiastical history, but a faint knowledge of even the construction of a common sentence in the English language, affirming that it is not the man of learning that can understand the Scriptures, but the man of grace. We acknowledge thus far that we must be changed from nature to grace in order to clearly

comprehend the meaning of many passages; still if we neglect to couple knowledge with "a life of faith," we must expect to find portions of the Bible unintelligible. There are passages that such persons have but a faint conception and will fail to understand without consulting the history and customs of the times and the various circumstances in which they were written. Well, now, I contend that the deeper we inquire into facts, whether historical or geological, the more clearly will the Bible appear as the Book of Revelation. If it is not the design of the Scriptures to teach scientific truth, it may be involved in its direct revelation. Thus far geology is revealed in the Bible. The common reader of Genesis is pointed to a previous creation in the single word "replenish," (Gen. 1: 28,) which means to refill. God used the same word in addressing Noah, when leaving the ark, *Be fruitful and multiply and replenish the earth*, (Gen. 9: 1), that is, refill it, re-inhabit, re-people it. But we are not to understand that when this passage was addressed to Adam that it hinted that man previously existed in a closed creation, but merely that our earth was previously inhabited. The work of the "third day" furnishes a striking reference to geology—a reference that cannot be rejected—that there were prior orders of existences upon our planet. *And God said, Let the earth bring forth grass, &c., after their kind*, (Gen. 1: 11.) What shall we say of these words? How were they brought forth? *After their kind*. The same is said of the lower animals—they were created *after their kind* or *after his kind*, (verses 21-24). But how was man created? Was he created *after* any model? He was, "after the image of him that created him," (Col. 3: 10,) or as in Gen. 1: 27, "in the image of God." There was then, to use a common expression, a pattern. The one after which the animal crea-

tion was formed is strikingly revealed in geology. From the very first appearance of animal life upon our planet we can see, as we peruse the geologic record, this pattern forming. The eternal purposes of God were exhibited in the primordial organisms long antecedent to their completion. In the words of Professor Owen "the archetypal idea was manifested in the flesh under divers modifications upon this planet, long prior to the existence of those animal species that actually exemplify it." "It is surely no incredible thing," says Miller, "that He who in the dispensations, of the human period spake by type and symbol, and who, when He walked the earth in the flesh taught in parable and allegory, should have also spoken in the geologic ages by prophetic figures embodied in the form and structure of animals." There were in these remote ages "shadows of better things to come." "The advent of man," as well as the present structure of the animal tenements, was "prefigured during the old geologic ages." It is certain that progression is heaven's order, and thus it seemed, that during the far back periods the eye of the Eternal was directed through the wide domain of the future, while His mighty hand was preparing for an intended order of existences. At length the pattern is complete, and He apparently breaks the mould in which it was cast, and all Heaven hails the dawn of the anticipated creation. The whole geologic record is now folded up, and all organic life ceases to exist. The table of creative action is cleared off, and the great Jehovah commences to produce a world of organism after the type that exhausted ages in its completion. This is the type referred to in the fore-mentioned phrase "after their" or "his kind." The last previous stock was the model for the construction of the present order, animal and vegetable. This model is doubt-

less written upon the geologic lid of the Tertiary volume. Would it not occur to the mind of the most illiterate and careless reader of the Bible from the contemplation of the words "after their kind," that those animals that were thus made must previously have had a "kind"? How could it be said "after their kind," if that species did not exist previously? A species could not have a kind without it once having an existence. If we examine the geological record, and minutely inquire into the structure of every animal from the first to the last in the scale, it will be found that none have the formation as those in the present day, except the very last in the geologic volume. "And it is a most significant fact," says Miller, "that both in the two great continents and the New Zealand islands there existed in the latter geologic ages extinct faunas that bore the peculiar generic characters by which their recent ones are still distinguished. The sloths and armadilloes of South America had their gigantic predecessors in the enormous megatherium and mylodon and the strongly armed glyptodon; the kangaroos and wombats of Australia had their extinct predecessors in a kangaroo nearly twice the size of the largest living species; and in so huge a wombat that its bones have been mistaken for those of the hippopotamus; and the ornithic inhabitants of New Zealand had their predecessors in the monstrous birds, such as the *dinornis*, the *aptornis* and the *palapteryx*—wingless creatures like the ostrich that stood from six to twelve feet in height. In these several regions two generations of species of genera peculiar to them have existed—the recent generation by whose descendants they are still inhabited, and the extinct gigantic generation whose remains we find locked up in their soils and caves." The Mosaic order of animals was a refined one. Those of the remote

geologic ages were huge and comparatively ill-formed. All was now "made" on a neat figure, and placed in a proper scale that man might be the ruler. The terrible spears and shields of the Oolite were replaced in a form less conspicuous, or entirely "dropped off." Its huge reptilian whales mounted on paddles, and the enormous mammals of the Tertiary,—all have a representative in the present order. If it is with variation, it is only because that it was necessary in taking a step nearer refinement. In a word, they were "a shadow of better things to come." After the shadow was perfect, the table was cleared for a fair reflection; hence the Mosaic animals, if I may be allowed the expression, were made "after their kind." The very same species of animals that lived at the threshold of the closing door of the Tertiary were reproduced on the sixth day of the present creation with some modification, according to the designs of the Creator. Therefore while Adam was made in the "image of God" (having no pre-existing species to be made after his kind), the animal of a lower order was made "after his kind," and may be destined like man to occupy another and higher seat beyond the veil of the future. For aught we know our planet may be selected as the workshop of our solar system and the stage of trial; and the spirit of the beast which the wise man represents as going "downward to the earth," while that of man "unto the God who gave it" may be transmitted to the sister planets. The opinion of the immortal Wesley that the lower animals are to share in a resurrection has been hooted at by many as foolish and strenuous; but we are happy to say that it has been by those who have had an eye less piously inspective and a heart less contemplative upon the less displayed yet important works of the Deity. There may be animals treading and grazing the

soil of Jupiter and Saturn, that once stood the storm of battle upon our planet. Surely if man is to have a seat in glory in the future, we would be very rigid to deny the inferior animals a place in another corner of the universe.

By viewing the word *create* in its proper light (which has been dealt with at considerable length in chap. 1), another very striking geologic feature is presented to us in verses 20, 21 (chap. 1). When we find two different words in the Bible employed in similar subjects, we must expect to find their signification different. Now we observe that when the water animals were brought forth, they are said to have been *created* (verse 21) while the land animals are said to have been *made* (verse 25). Of course the reference is entirely to the lower animals. Now, we ask why are those different words used? Would it not occur to any sensible mind that there must have been a different mode of production? Remember these are the words of the Bible. I have already shown that the word *create* means *to spring from*. It is here unnecessary however to make this remark, as this passage itself forces this conclusion. "Let the waters bring forth abundantly the moving creature that hath life." It is immediately afterwards said (verse 21) that "God created great whales and every living creature that moveth, which the waters brought forth abundantly." There must have been therefore animals living in the waters on the fifth day that lived long before that period, when the Creator gave them the power or perhaps rather a greater power of increase. Those that they brought forth were the "great whales," &c., that are said to have been *created* (not the originals themselves at that time). This is very plainly indicated by the two words "hath life." This passage appears to me to have the same signification as if it read in this wise: *Let the animals in the water multiply.*

But why should such a view be taken of this passage? It is replied because *life* is twice indicated in the same passage, of the same animals, and in the same sentence. The word "moving" would be quite sufficient, and would evidently *only* have been used had the Creator then, and not before, given rise to their existence. The land animals having had no previous being (*viz.*, the animals of the sixth day) as they were "made," are represented as then being in their first existence, and accordingly only one word to indicate life is used,—the word *living*, verse 24. But from the duple testimony of life in the words "*moving*" and "*hath life*" we may fairly conclude that the latter are intended to show that there were animals then living, that already *had* life, for the verb is in the present tense. It is demonstrable from geology that there are animal species now in our seas that lived during the remote geologic ages, and therefore had not their first existence on the fifth day. As has been said, the close of the different geologic periods was ushered in by the submersion of the land. The land animals that lived in the geologic age immediately preceding the Mosaic creation, were, to use the words of Miller, all destroyed by "the last great depression of the land," while the aquatic inhabitants remained unaffected, they not being deprived of their natural sustaining element. Reason would at once indicate the improbability of the Creator blotting out the existence of the watery creation merely to produce them again, as they would in no way interfere with the succeeding human species, for whose reception the world was renovated; while the land inhabitants would, on the contrary, as geology testifies, have swept him from creation if continued in existence. This is another remarkable point where geology and the Bible are linked together. Nothing surely is more striking and arrest-

ing than this very fact that the Bible in speaking of the work of the fifth day embraces geology in the very text. Were I a deist,—a denier of revelation, and chanced to meet with this single, simple, and yet startling point, which is in itself a standing witness of the workings of heaven's finger in the composition, it would surely be the means of my conversion; for while it asks only reason to preside in judgment, it forces the irresistible conclusion that nothing short of superhuman influence could have caused this anomaly in the text.

Again, verse 5, chap. 2, furnishes another reference to geology in the Bible. The passage reads in this wise: "And every plant of the field before it was in the earth, and every herb of the field before it grew" (the reader will please see this in the Bible). Now it is asked, Who has ever given a satisfactory explanation of this passage? Has it ever been clearly expounded by either commentator or Biblical critic? Dr. Clarke makes the attempt, and apparently satisfies himself and many of his readers, in saying, that they appeared in full growth; but his interpretation directly clashes with verse 12, chap. 1, which says, that the earth brought them forth, or which is the same thing, that they grew out of it. It surely could not be that he had in view "the trees of the garden," for we are expressly told (chap. 2:9), that the Lord God caused them to grow out of the ground. This is something like his remarks on the fourth day's work, when he says, that the earth stood motionless in her orbit (if she had any) till the sun was created. It might be added that another very careless remark is made in his comment on the concluding verses of chap. 2, where it says, "Therefore shall a man leave his father and his mother, and cleave unto his wife," stating that Adam was the first prophet (supposing, of course, that it was he that used them); when if he had

turned to Matt. 19: 4, 5, he would have there seen that instead of these words being Adam's, they are God's. This assertion of Dr. Clarke's has made an erroneous impression upon some writers. It lead Mr. Wickens somewhat astray in his Fulfilment of Scripture Prophecy. But what of the plant and herb? The fact is, they grew out of the ground, as the Bible testifies (verse 12); and yet they were in full growth before they grew. And *yet they grew*—and that too out of the earth. We must believe this, if we believe the Bible! But does it not involve a contradiction? It does, if we accept the interpretation of Dr. Clarke, that they appeared in full growth without growing. If God had made and then planted them, verse 12 would be in error, which declares that they grew out of the earth. And if we suppose that they sprang up to perfection in an instant, they must still have grown out of the ground. But they did not appear in full growth. They grew, as they grow now, out of the earth; and yet they grew before they were in it. This, of course, is confounding to the reader, who has in view only the present creation; and, might we not add, confounding to all but those who acknowledge a previous earthly creation. Let me remark, before proceeding further, that the term *earth* in this place has a limited meaning. It was not applied to the earth as a sphere or planet, but only to the dry land: "and God called the dry land *earth*, and the gathering together of the waters called he seas" (chap. 1: 10). That part of the terrestrial surface to which the above text refers, may never have been above the face of the waters before, still geology seems to favor the opinion that it was. Be this as it may, it was above the waters then, and brought forth "the herb yielding seed." The inspired penman doubtless had this fact in view when he wrote this 5th verse of

chap. 2. Dr. Colenso has, perhaps ere this, pitched upon this last passage to carry out his own views, that these two chapters were not written by the same person. But we are not content with such a doctrine; and we are glad to state, that this passage is capable of being "cleared up," and the passages, too, that the Doctor has selected as clashing with others. We might dispose of this verse very handily without referring to geology, if it only said that the "herb," as well as the "plant," grew "before it was in the earth," for we might say that as the term earth only meant *dry land*, that they grew in the water; but the former was made (perhaps meaning, brought to perfection) "before it grew." In short, I conceive the passage to mean the same as if it had been thus written:—And every plant of the field, before it was in the Mosaic earth, and every herb of the field, before it grew in this creation (meaning, of course, the species). The "plant" and "herb" that lived in the geologic age, immediately preceding the Mosaic creation, had only then been "made." The species of plants that lived in the earlier geologic ages, were a shadow, if you please, of better plants to come. As the tree was once a little blade, so the rich species of "plant" and "herb" were once quite insignificant. The species grew to perfection in the long protracted eons of the geologic ages—as the little blades grow to a perfect tree. I contend, therefore, that they were only completed—only "made"—till the last geologic age had drawn near its close. The "pattern" was only then finished. God made every plant of the field in the geologic ages, or, in the words of revelation, "before it was in the earth" (meaning, of course, the present land), "and every herb of the field before it grew" (in the present creation). If any person can throw any more light upon

this passage, or give a better interpretation, without acknowledging a previous creation, I would greatly like to see it. This passage, however, may be viewed in another light, still it is in the light of geology. The plants and herbs of the Mosaic order evidently sprang from the seeds already in the earth, and therefore were not "made," as were the animals (verse 25). The word, "made," used in this passage, does not refer to the present creation at all. "Made before it was in the earth," means made before the present creation. If a seed be opened and carefully examined with a microscope, the minute plant—the embryo or germ of the future mature plant or tree—will be there seen, coiled up within the precincts of its little cell, ready for development in the proper season. These plants in the seeds, of course, grew while the seed was suspended to the branch of the parent tree, and hence all plants grow before they are in the earth. But, it may be enquired, do you think Moses would write in this apparently blind manner? Why, he has done so already; and this is not the only passage that has fallen from his pen which involves a query, but which is only on account of our ignorance of the Hebrew phraseology. In Deut. 28:68, we read thus—"And the Lord God shall bring thee into Egypt again with ships, by the way whereof I spake unto thee. Thou shalt see it no more again; and there ye shall be sold unto your enemies for bondmen and bondwomen, and no man shall buy you." How could they be sold without a buyer? This prophecy of Moses was literally fulfilled, "Egypt indeed was the great slave mart of ancient times; and several of the conquerors of the Jews had before sent at least a large proportion of their captives thither to be sold."*

* Pictorial Bible.

When Jerusalem was taken by Titus, many of the young were sent to the public works in Egypt, and great numbers were sold almost for naught (see Psal. 44:13). *And no man shall buy you.* Adrian sold them in a fair like horses; and they were proffered in such multitudes, that sometimes there were no buyers.

I have said that the Bible includes geology in the very text, and that it has left a space for it. This space extends from "the beginning" to the commencement of "the first day." Men who have inquired deeply into the matter, such as Drs. Sumner, Buckland, Conybeare, Pye Smith, Harris, Vaughan, and Hamilton,—men distinguished for criticism, talent, and ability,—early came to the conclusion that "the writings of Moses do not fix the antiquity of the globe." The phrase "in the beginning" is anything but definite in respect to time, and is employed merely to designate the commencement of the material system in the true God as distinguished from those of the heathen. This expression was called for in the age it was written, to show to the Israelites that the gods of the heathen had nothing to do with the creation of the world; and, therefore, that they were not the first cause as was the current belief among the then nations of the earth. The Hebrew term, which we render *and* (the first word in verse 2), furnishes an argument, if correctly interpreted, in favor of the above opinion. The Hebrew term, thus translated, is the general connective of that language, and, in the words of Dr. Pye Smith, "may be copulative or disjunctive or adversative; or it may express a mere annexation to a former topic or discourse, the connection being only that of the subject matter, or the continuation of the composition. This continuative use forms one of the most marked peculiarities of the Hebrew idiom, and it com-

prehends every variety of mode in which one train of sentiment may be appended to another." "In the English Bible," says Dr. Hitchcock, "this particle is usually rendered by the copulative conjunction *and*; in the Septuagint and in Josephus, however, it sometimes has the sense of *but*. And some able commentators are of opinion that it admits of a similar translation in the passage under consideration. The elder Rosenmuller says, we might read it thus: "In the beginning God created the heavens and the earth. Afterwards the earth was desolate," &c. Or the particle *afterwards* may be placed at the beginning of any of the succeeding verses. Thus: In the beginning God created the heavens and the earth, and the earth was desolate, and darkness was upon the face of the waters. *Afterwards* the Spirit of God moved upon the face of the waters. Dr. Dathe renders the first two verses thus: "In the beginning God created the heavens and the earth; but afterwards the earth became waste and desolate." This opinion is strongly argued by the description given in verse 2 of the earth's condition before it is said, Let there be light. What call for this description? Moses surely used these terms for the sole reason of showing the power of God, and to teach that He alone renovated the world. But what necessity in using such language, when he had already referred the creation of all unto God? The only reason that can be given is that they have no connection whatever—that there was a state of perfection and a succeeding state of ruin before the creation of light. It must also be remembered that God's works are perfect, and what he creates he creates in a state of perfection; but if the earth appeared, on its first emergence into being, (*i. e.*, its surface, which is only dictated by Moses,) in the state referred to by

the inspired lawgiver, it had few marks of perfection upon it. If we look to the days of the creation we will find that God completed one act and brought the object to perfection before his entry upon another. The trees of the third day, though they were in existence, were not finished; they had to bring forth fruit before "God saw that it was good." The earth must, therefore, have been perfect, and adapted to his designs at its creation, before he said, Let light be. Hence, if there had not been a wreck and ruin before the first day, Moses certainly would not have given the description contained in the text. Many, no doubt, will be ready to say that this view of this text of Genesis—that there was a *geological space* or rather interval between "the beginning" and the first day—would never have been thought of had it not been for the speculations of the geologist. But it happens that this opinion was current among the learned long before there was a geologist in being; among such men, for instance, as Augustin, Theodoret, and many of the early fathers of the Church, as Justin Martyr, Gregory Nazianzen, Basil, Caesarius, Origen, etc. In recent times, besides those heretofore mentioned, were Bishops Patrick, Horsley, and Gleig; Crusius, Doederlin, Sharon, Turner, Wiseman, and others who entertain the same opinion.

In appealing to geology, we are presented with facts, and these rallying arguments, too formidable to be overthrown, that endorse the above opinion; and therefore tell a story strikingly in conformity with the teaching of the Mosaic record. If the whole geologic library was formed and indited by the finger of time, through the agency of those second causes, which are still at work, of which there is abundant proof, the conclusion is irresistible that there were animal and vegetable kingdoms upon our planet long before the first

day of the Scriptures. Dr. Woodward, however, a distinguished cosmogonist of the last century,—I say distinguished, for he certainly should be for his opinions,—argued that the different strata composing the greater part of the earth's crust, were formed or rather adjusted by the waters of the Noachian deluge. He imagined, to use his own words, that the "whole terrestrial globe was taken to pieces and dissolved . . . and the strata settled down from the promiscuous mass as an earthy sediment from a fluid," so that the plants and animals, and particularly shell-fish, remained enclosed by mineral and fossil material, which have preserved them entire, and which are what we now call fossils. But who that has ever read a page of geology, or formed the least idea of the earth's crust from physical facts, would recognize such palpable nonsense? If the very title of Dr. Burnet's work, in the language of Hitchcock, cannot but provoke a smile, what shall we say of the idea of Dr. Woodward? How could the waters of the flood—even allowing them to have had the depth of six miles, which (if universal as he required it, and if possible more too) would demand more than twice the water upon this planet—dissolve a mass of compact earthy matter upwards of six miles in thickness? But even allowing that the deluge was universal, and that the waters had an equal depth all round the earth, and even submerged the summit of Chimborazo, the conclusion would be quite inadequate that the strata which in America is far above six miles in perpendicular depth, was dissolved, much less held in solution for deposition. There is one simple fact that is in itself sufficient to explode all such theories of the stratal origin, while it refers at the same time the adjustment of the strata to second causes, which our earth is still undergoing,—and that is the tracks of animals. If the entire stratified mass was once in a semi-fluid state,

i. e. at the time of the deluge, how did it happen that the tracks of animals were not effaced? In the lower stratifications the footprints of extinct animals, especially those of the reptilian class, a species which existed in the time of the deposit of the Coal Measures, but which is now, nay, long ago, extinct, can be distinctly traced; and the tracks of stupendous birds are not at all uncommon in the strata in the valley of the Connecticut. And if this was the origin of the distinct stratifications, will any one give a reason why the fossil remains of none of the existing species of animals are found any lower down than the latest geologic formations? If the strata were laid according to their respective densities, as he asserts, why are not at least some of the existing species of quadrupeds found in a fossil state in the Old Red Sandstone, for instance? for there we find organic remains that have a specific gravity, much less than the bones of many of the now existing quadrupeds; and it is also worthy of remark, that neither the remains nor the works of man have been found any deeper in the earth than the alluvium. It is a presumption, therefore, that as this deposit is not two hundred feet in thickness, that man has existed upon the earth comparatively but a short period, in view of the age of the world as exhibited in the several miles depth of strata. But we will not permit the sagacious Doctor's hypothesis to escape without calling to mind another idea, though unnecessary as far as vanquishing the theory is concerned. I refer to the magnitude, armature and power of the animals that once existed upon our planet. What, we ask, without a continued miraculous interference, would have protected our first parents from the sting or battle-axe of the huge armed destroyers that once ranged our earth had they then existed, as such arguments demand? What would have happened to the vile

antediluvians, had such demons then reigned as those which occupied the three old elements earth, air and water during the Oolitic ages? The terrible reptile (*Pterodactylus crassirostris*), which then had "the power of the air," mounted upon mighty wings that darted forth and bore down the fleetest insect, would have saved the Creator (had He willed it) the vengeance of a deluge, and Noah the trade of a carpenter, as a single specimen would have been sufficient to speedily blot the disgusting picture of crime and guilt from the eye of justice, and sweep the very trace of humanity from the face of creation. The sumptuous meal of "the two bears" would have shed a smile in contrast to the fury of the avenging foe. But again: if the deluge was the origin of the formation of the strata, the rocks and soils which enter into their composition must increase in density as we penetrate the earth; for if the strata were formed as "an earthy sediment from a fluid," it is plain that the bodies having the greatest density would have the lowest place in the scale, and the lightest the highest. But on examination it is found that such is not the case. Whole strata or layers of rock are frequently found lying upon beds of sand, gravel or earth, and these too in such a state as to afford no room for the supposition that they were there deposited by any mechanical force, or any other agent than the causes to which we attribute their origin. I say mechanical, meaning that they were not there thrown by volcanic violence. But it is scarcely necessary, it is presumed, to pursue this point farther, as no one that has ever read of a fossiliferous rock, its contents and relation in the strata, would venture upon such unphilosophical grounds. This theory of Woodward answers now as a lighthouse to warn the scientific explorer off the coast of bygone logic. It is about as sensible as the theory of Rome in the seventeenth

century, that there could be no more than seven planets, as there are only seven orifices in the head,—ears, eyes, mouth, and nostrils. We have but to take a view of fact and a glance at reason to see its fallacy.

If we assume the hypothesis that the strata were formed by any other agents than those second causes which are still in action in building upon the terrestrial surface or rather (perhaps) changing it, we will inevitably plunge into difficulties and embrace absurdities which cannot in the face of reason be set aside. The gradual process of stratification is the only one that can be plausibly adopted in the present stage of science. The opinions of such men as Woodward, Catcott, Burnet, and the doctors of Salamanca,—all of whom taught fallacious doctrine,—answered to the call of the times in which they were written remarkably well, yet they fail to meet the scientific demands of the present day. The opinion of Burnet, that the earth was like a hogshead filled with water, and which bursted out and caused the deluge, is peculiarly characteristic. But men were then in the alphabet of geology, and like the child at school had but a faint idea of the more intelligible yet difficult phrases of a succeeding lesson. Their polish of sentiment, which won the admiration of the leading members of society, and courted the smiles of the passing crowd for more than a century, cannot now polish black to appear white, or tarnish truth with the deceptive paint of error. The sentimental plasterer can no longer daub over the countenance of reason with the brush of disguising fiction. Men of the present day have taken a step higher than to be led by the nose along the aisle of ignorance, with but the faint glimmer of a Woodward or Burnet ahead of them. Independent thought and criticism have a less palsied dominion than to be trampled upon by the dominant

hoofs of an absolute priesthood ; and the day has gone by when men such as those above mentioned, were permitted to ride proudly and quietly along the streets of argument upon the donkey of a false philosophy. And surely it is high time, for the jubilee of intellectual freedom, as the bit of ignorance, was reined in the mouth of even the last two centuries. We can now entertain what notions we may ; and by simply exposing them to the gaze of the enlightened world, if they are erroneous, we can have the satisfaction of seeing them exploded, and hence there is a chance for improvement. It is no longer the feature of ecclesiastical authority to swear the astronomer that the earth is motionless, or that Jupiter has no moons. The theories now-a-day must stand by themselves without a prop from a tyrannizing power ; and if they are unable to bear the arrows of criticism, they are sacrificed to the benefit of succeeding generations. But to return.

The gradual process of stratification is proved by each geologic system having its own peculiar fossils. Each has its predominant organisms which characterize it from all others. If this is the case then, there must have been, if I may so express myself, *different creations*, which had each their turn in being ; and therefore the gradual process of stratification is evident. The Carboniferous period is distinguished for its profuse flora peculiar to no other, as regards its extent and abundance ; and the species now discovered in the coal measures furnish indubitable evidence to their antiquity. We have trees now in existence that are no less than four thousand years old, and the species exhibit few marks of being on the decline. In all probability the principal vegetable species that flourished before the flood are still in a vigorous condition. Should our earth remain unaltered in its surface or orbit for twenty thousand years hence, they

would in all probability still continue (though perhaps somewhat dwarfish) to decorate our earth with a lively vegetation. Should a geologist exist in that future age, and penetrate through the then accumulated strata to the fossil remains of our present forests, would he not discover some difference in the growth of the species, and therefore judge they had been there deposited in a long ago age? But suppose him to live in an age still further removed in the future, and to find on arriving at the remains of our present forests, that what were here found as trees existed in his age only as shrubs, would he not be justifiable in saying that the period in which these fossil trees flourished must have preceded his times by myriads of ages? Well now we are in just such a position, for we find that during the Carboniferous age gigantic lepidodendron, sigillaria, calamites, and equisetia existed, but are now represented by ground pines and equisetia, that grow to the height of but a few feet or inches; and out of the two hundred and fifty species of ferns yielded by the coal measures, some of which attained the height of fifty feet, only forty species now remain lifting their tiny branches but a few inches above the surface of the ground. This vastness of size and multiplication, as exhibited in the coal measures, could not have obtained in simply a few years, but must have exhausted very many centuries. It was the great vegetable period when few animals existed. No grazing animal trod its plains or valleys, as its flora was unfitted for the support of either graminivorous bird or herbivorous quadruped. It was the reptilian class of life that principally ventured through its huge dreary forests; and their footprints upon the pages of that system are alone sufficient to show that its formation was not affected through mechanical agency in a short period, but a gradual process. The Oolitic system

must also have been a protracted period. Reptiles were everywhere the lords of sea and land. Earth, air and water teemed with those voracious giants, when few if any herbivorous animals could possibly have had being. Thus it was that during the geologic periods only one branch of nature underwent a thorough cultivation. It appears that the Creator put every part of organic creation separately on the scales (though a remnant remained with the succeeding), before he placed them all on together, as in our present organization. And it is not till we rise to the times of the Tertiary, that we meet with the development of that important class of animals, the mammalia; and these, too, everywhere tell the story of long geologic periods. If we look through the whole ancient record, as presented in the strata, we will find that during the course of the formation of the fossiliferous rocks, not less than four or five distinct races of animals successively occupied the land and water; and these were so very unlike in anatomical structure and habit as to assure us that they could not have existed simultaneously. The organisms of the old geologic epochs have little or no place, as far as terrestrial life is concerned, in the last geologic order, and few are now in the field of action. Out of the several thousand species of plant and animal that have been found in the older rocks, only now and then one is met with at the present day. Now, if we again look to the duration of the vegetable and also animal species, we may, on very plausible grounds, conclude, that those which existed during the geologic periods occupied at least as protracted an age as we would expect those that now live, and on such an hypothesis we are again led to the conclusion that the fossiliferous strata must have required myriads of years for its complete deposition, for in the whole history of these two branches of created

life, now on the face of the globe, not more than nine or ten instances are recorded of a species becoming extinct, and these are some large birds, as the dinornis and dodo, which once inhabited the Islands of Bourbon and New Zealand. (The apteryx Mantelli is a genus which will probably in a few years disappear.) All the other animal species that were made on the sixth day, as the horse, elephant, lion, tiger, &c., are still in existence, and if we are to judge from the past, will in all probability continue should our earth remain unchanged, for thousands of years to come. But it might be thought that, as I have argued that each geologic system was brought to a close before those ancient species had time to become extinct, their destruction having been affected by the sinking of the land or the elevation of the bed of the ocean—that the above argument would be cut off, but the reader must bear in mind that this objection would be ineffectual, as it is based upon the grounds that the strata were *gradually deposited*. But even could this point be thus set aside, we could repair to the aqueous tribes, and summon argument equally formidable. Still, if each of the systems were thus closed, the event would not terminate the vegetable races any more than did the last great depression of the land or the Noachian deluge, for we have vegetable species that lived early in the geologic series. But to say that each period was closed before sufficient time had elapsed for a species to become extinct, would not be a general rule, at all events as far as some ichthyic classes are concerned. The Pterichthys, for instance, which appeared with the earlier deposit of the Old Red Sandstone, became extinct immediately before the close of that system. But we cannot, in our narrow limits, adduce any more upon this point, suffice it to say that this fact is now too well established to be overthrown.

Of the length of time which elapsed between the close of the geologic period, immediately preceding the advent of the Mosaic creation and the era of that event, we may have an idea by considering the preservation of the vegetable kingdom. We read in Gen. 1:12, that the vegetation of the third day sprang from the ground; and I think that no reasonable person, when looking in the face of geology, would deny that these trees and herbs grew from seeds already in the earth, and which had been there deposited during the vegetable reign in the immediate preceding age. If this was the case, which I think has already been shown, we have some grounds for an argument that the time which elapsed from the termination of the previous stock till the commencement of the present order of things was quite a limited space. If we are to acknowledge, with all commentators and geologists in general, and which seems to have the highest degree of probability in its favor, as well as being plainly taught by the Bible, that the entire surface of the earth was covered with water on the first day, we must conclude that this event was introduced for the purpose of closing the geologic volume for the introduction of a new order, when all the vegetable seeds were submerged in the watery element. This was doubtless completed before the departure of many years, that the seeds might not be destroyed by long submergence. But if the whole terrestrial surface was covered with water, it is evident that the time the earth would require to become dry could not have been simply a few months. If the deluge of Noah, for instance, which was no doubt ended as speedily as the established laws of Nature would permit, and which covered but a part of the earth's surface, lasted more than a year, as the waters could not flow over the extent of country and disappear in a shorter time, would we not expect that a

similar cataclysm but of a much greater extent would require a period proportionably longer? It is plain, therefore, that the duration of time between the termination of the final geologic age and the third day of the Mosaic creation must have been some years at least. The Bible quite plainly indicates that the land was overflowed by the ocean before the first day, and that it was gradually rising or rather that the waters gradually abated from the first day to the evening of the second, for in Gen. 1 : 2, we find that they are spoken of under the terms "the deep" and "the waters," in such a way as to convince that the whole surface of dry land was beneath the surface of the waters; but in verse 9, we find that there was land (but not yet dry land) above the surface of the waters even before the going forth of the fiat, "Let the dry land appear," for in this same decree it is said, "Let the waters be gathered together *unto one place*," as much as to say, in our view of the case, that the waters were then in *more than one* place, occasioned, of course, by the gradual abatement of the waters from the first or rather before the first day till the commencement of the third, rendering the high points of land probably the summits of the ante-Mosaic mountains to peep above the surface. The apostle Peter apparently makes reference to these when speaking of the heavens being of old "and the earth standing out of the water and in the water" (2 Pet. 3 : 5). But from what has just been said, is it not conceivable that the waters must have been upon the earth for a space not less than two years before the land's becoming dry on the third day? And if the first and second days were periods of some years, as was the third day, they were upon the terrestrial surface much longer. Then the closing geologic portal must have almost swung upon the same hinges as the door that opened to the

Mosaic economy. Indeed the wind, which is represented in verse 2, under the term *Spirit of God*, was in some probability the resulting agitation of the atmosphere that would naturally attend such a catastrophe,—the sinking of the land and the consequent rushing of the ocean. It might be remarked here, that Mr. Miller, in arguing a partial deluge, asserts that neither plants nor the seeds “would survive submersion for a twelvemonth,” and concludes that “at least three-fourths of the terrestrial vegetation of the globe would have perished in a universal deluge that covered over the dry land for a year.” But on what foundation could he base such an assertion for the support of his argument? Has the fact how long seeds may be submerged without losing the vital principle ever been practically tested? The seeds of the different grasses it is found will vegetate after being buried in the earth a thousand years. Barley has been sown with success, after having been kept a hundred and forty years, and wheat will retain the germinating principle for ages. But we do not say that these seeds would be thus preserved under water, still it does not appear why they could not remain above a twelvemonth without complete suspension of vitality. Indeed if what has been said is true, and it appears to have something formidable in its favor, the seeds of the whole vegetable kingdom must have been in water a much lengthier period, and yet retained the vital principle. But it might be urged as an objection, that the waters were not upon the face of the whole earth on the first day, and, therefore, that the whole vegetable creation was not deluged. But this would little avail, unless it be also proved that the waters were upon the earth less than a year, or, in other words, that the extinction of the pre-Mosaic age preceded the third day, but a period less than a twelvemonth (which I doubt of ever seeing proved),

for the same part of the earth's surface that is referred to in verse 2, is the same as that spoken of in verse 9, and it was out of that very land that had been deluged that the vegetation of the third day grew. But it will be shown in the following, that there is no room for an hypothesis that the vegetable kingdom flourished in the Mosaic creation before the arrival of the third day.

CHAPTER VII.

THE FIRST DAY.

THE first act of the Creator, in the record of the six days, is set forth in the terms, Let there be light! Under the term, *light*, here used, some suppose angels intended. Origen, Bede, and some others, however, thought that Moses included them in the first verse—*In the beginning*, &c. But it appears, as late critics understand it, that the word *light*, in this place, is only intended, as in its common acceptation, to signify *illumination*. In II Cor. 4:6, we read, "For God, who commanded light to shine out of darkness, is he who hath shined into our hearts." This light must, therefore, have been the result of the dispersion of darkness from the face of the earth, either by the adjustment of the circumambient luminous atmosphere, or the dispersion of aqueous, and other substances, in a vaporous state in the air, that hindered the penetration and diffusion of its rays. But the electric power, which caused the depression of the land at the close of the preceding period, may have connected the luminous atmosphere, and the body of the earth, by causing the latter to stand in a negative relation to the former, in which case the luminous atmosphere would close down upon the surface, preserving the waters in a fluid state, while darkness would reign upon the face of the deep, there being no longer aerial friction. If any person chooses to hoot at this idea, as being without foundation, let them duly consider the arguments in chap. 4, and additionally ask themselves,

What preserved (as cold is only the absence of heat) the waters from being congealed on the first, second, and third days, which were quite lengthy periods, before the making of the sun on the fourth day? That the waters were not as it were, *frozen over* on the morning of the first day, is seen from the declaration—"And the Spirit of God moved upon the face of *the waters*" [Gen. 1:2]. And further, what preserved them before the first day, at all events, from "the last great depression of the land," till the going forth of the fiat, Let there be light! I here interrogate the intelligent reader, was it not the raising of this luminous atmosphere, that caused the light here spoken of? In my opinion it may have been, and hence, as Paul says, it "shone out of darkness." When God said, Let there be light! we are not to understand that he then created it, but only "caused it to shine." The Mosaic creation, as far as the physical structure of the earth was concerned, was only an arranging or remodeling of what already existed. Where it is said, that God divided the land from the water, we are not to understand that there was no land before the third day, or that there were no continents and oceans previously. The origin of this light, it is true, is not ascribed in the Scriptures to a luminous atmosphere, as the Bible is silent in all such matters where science would alone have the prerogative; still it is plain that there was an existing agent that would produce light, if put in order, though the narrative does not go on to say that God made it, evidently because it would have given space for doubt and unbelief, for the Jews would not have understood the meaning of such an expression. But on the fourth day, when God said, Let there be lights in the firmament of the heaven, it is also stated, that "God made two great lights," because the people were acquainted with their

existence. This, it is probable, was added, to likewise show that the heavenly bodies were not self-existent, and hence, should not be worshipped, as they are created objects. But if the Creator only raised the electric atmosphere from the earth's surface, causing the electric currents, which emanated from it, to produce light by creating friction with the aerial particles, would it have been proper for Moses to say that God made this light? Just as proper as to say that he made the moon a light, when she only reflects the light of the sun; or as to say that he made the sun and moon on the fourth day, when they both existed before. This, though proper, has as good a right to be rejected as in the other case.

This luminous atmosphere, which then enveloped the entire terraqueous globe, the source, or rather cause, of the light spoken of in this passage, continued to illuminate the earth's surface from pole to pole, during the first three, and, in fact, the whole six days of creation; for as God, in whom there is no darkness at all, required light on the first day to lighten his works, it is plain that he did not work in darkness—there must, therefore, have been light at the poles; and as he rested not from the first till the seventh, it follows that there was no time of darkness during the entire "six days." Even on the fifth and sixth days, the luminous atmosphere, as has been already remarked, continued to give light in the northern and southern latitudes, after it had disappeared from the equatorial regions of the heavens, there permitting the sun to become visible.

The Creator is here represented as holding converse, and hence it would appear that there was more than one present. This seems quite plain; and the more so when we come to the formation of man, *Let us make man*. The plurality here recorded has given rise to a series of contentions and disputes.

Some say (as some of the Unitarians for instance) that this is the language of royalty, but it happens that there is no such language in Scripture. The pronouns we, our, us, &c., were not used in royal inscriptions in the place of I, mine, me, &c., till a comparatively recent period in history. Indeed this mode where the plural is placed for the singular was first introduced by John, king of England, in the twelfth century, and at present is not only used by the queen and council, but occurs in almost every public address and composition. The modern Jews and some Christian Unitarians say that God here held council with the angels; but there are objections to this doctrine, and so it may be said of the doctrine of the Trinity. In reference to the former, is it likely that God would say to the angels "Let there be," which is before all his works, and particularly—"Let us make," (See Isa. 40:14). Such a sense seems also excluded by the additional phrase, "in our image." Now in whose image was man made? In the image of God. But if man was made in the image of those that were addressed,—the angels,—they must also have been in the image of God. But they could not be in the divine image in the same sense as man was. If this image was confined to "righteousness and true holiness" (Eph. 4:24), there would be less objection to this mode of interpretation; but it appears very plain that *dominion* was a prominent feature of this image. Man then reflected the image or likeness of God, inasmuch as he was the ruler of this lower world, as God is of all things in being. If this is true, angels are not in the image of God. It might be here remarked that if righteousness and true holiness alone constitute this image, how is it that Eve is never said to have been in the image of God? The inspired writer appears to have purposely avoided giving woman that dis-

tion, for he states thus—"So God created man in his own image, in the image of God created he him; male and female created he them." Indeed we read of no such consultation at Eve's formation; and even did it there occur, unless the declaration was set forth, I see no reason why we should say that Eve was in the divine image in the same sense as was Adam. Now, it is asked, does it not appear that the term image here used, while it may signify holiness, means dominion, nay, more than that, for as Adam was made some time before Eve, would it not signify *first dominion*, or he who first ruled? In this sense Adam would not only reflect the divine image in merely *dominion*, but his *eternal dominion*. That He first existed, first ruled. It could not therefore be said that woman, rather Eve, was in the image of God. But the Unitarian will say that Eve had dominion over the fish of the sea, and over the fowl of the air, &c., as well as Adam, for it is not written—Let him have dominion, but, Let them, &c. (Gen. 1:26). But it may be replied, was Eve the head of the whole creation, Adam unaccepted, or were they both equal in reference to *dominion*? We are obliged to answer in the negative. We would, it is true, be inclined to believe from inference, that Adam was not the superior, that neither was subject to the other till after the Fall, when it was pronounced as a penalty upon Eve, that she should be subject to her husband. But if we look to the New Testament we will there see that Adam was the superior, and in Gen. 2:18, we read the woman was made for "an help meet" for the man. In I Cor. 11:8, 9, it is said that the man was not created for the woman, but the woman for the man; also that the man is not of the woman, but the woman of the man. (See I Tim. 2:13). Indeed that this is correct is seen from Paul's own words, I Cor. 11:7. It may be

remarked, that if God addressed any beings present at the creation of man, which seems too plain to be denied, he must have addressed one that was coequal with himself, for it reads: "So God created man in his image," not in their image. It does not appear that the angels, which were then present, were engaged but in song and praise (Job 38:2). Dr. Boothroyd says, that the Father addressed the Son; and this seems strengthened by Prov. 8:29, 30; and if we accept this assertion, the above phrase in his image, will become manageable, for Christ was "the image of the invisible God," and his own language on one occasion was, "I and my father are one" (John 10:30). The tenor of Scripture on the whole seems to decide that the converse manifested in the Mosaic record was between God and his Son, for He created all things by Christ Jesus. Eph. 3:9, Col. 1:16, Heb. 1:2.

The doctrine of the Trinity does very well; but when we say we believe that there are three persons in the Godhead, the Father, Son, and Holy Ghost, it appears to me that we overleap the mark. Is not God holy, and the Son holy? Why then make the Holy Ghost the third *person*? This point however is scarcely worthy of notice, as the doctrine of the Trinity makes no particular path in which this article in the creed would require to drag the Scriptures. However, it is my humble opinion, if there is any great thirst for "a new name," that the term, Duotarian would be nearer the truth than either Unitarian or Trinitarian. Some have tried to prove the doctrine of the Trinity from the Hebrew word Elohim, God. There is scarcely an argument put forth by us, Trinitarians, without the remarkable comment of the eminent Jewish Rabbin, Simeon ben Joachi, is cited as a proof that the word Elohim signifies a trinity in unity. His words are, in his comment on the sixth section of Leviticus, "Come

and see the mystery of the word Elohim: there are three degrees, and each degree by itself alone, and yet, notwithstanding, they are all one, and joined together in one, and are not divided from each other" (as quoted by Ainsworth). But is this a proof of the doctrine of the Trinity? for as the word Elohim was not exclusively applied to the Divine Being, but was a general name for *deity* among the Hebrews, and therefore applied to heathen deities (Dagon 1, S. 5, 7. Astarte 1, K. 11, 5. Baalzebub 2, K. 1, 2, 3, 6) as well as the true God, would it not be as proper to argue that they consisted of a treble union as well as the Creator himself? If the same could be said of *Jehovah*, which is the personal name of the covenant God of the Hebrews (Ex. 6: 3,) and which is never used of any other god or object of worship, would not the argument have a greater weight? But such cannot be said. To these questions I reply, that, I am satisfied that the word Elohim being plural denotes a plurality in God, but I cannot say just now a tri-unity. But the sceptical Dr. Colenso says, that "it is quite a mistake to think of proving the doctrine of the Trinity as some do from the fact that Elohim is a *plural* name," smiling in his sleeve therefore that learned men had so long overlooked his supposed discovery. But I think we can show that the word Elohim does indicate a plurality in the Divine nature, even if it is applied to idols, a fact which stimulated the Doctor to draw his conclusion. Let us acknowledge that our first parents in Eden and their descendants till the time of the flood were known to no other name for the true God but Elohim, as Dr. Colenso urges with but a very narrow limit of argument, would any of those who retained the original language in the post-diluvian world be likely to term any object of worship anything else but Elohim, even though it was "a plural name"? Would they

not be as likely to say the Elohim of the heathen as we would the god of the heathen? In fact what else could they have said? for they had no word in the language to signify an object of worship but Elohim (if they had not Jehovah, as he maintains). Hence the word Elohim originally must have denoted a plurality, or why in the plural form? For this the Bishop gave no reason on his denial, only that it is "most probably a *pluralis excellentiæ*," an alley in which he runs that he might not wind himself up on the main street, in question. The very fact that the word Elohim was first applied to the Deity himself is sufficient proof of a plurality in the Divine nature, no matter *how* it was *afterwards* used.

And the Spirit of God moved upon the face of the waters. Whether this motion was the effect produced by the real action of the Holy Spirit has been a point of some criticism and dispute, but by a strict attention to the metaphoric language of scripture and the origin of particular terms, the true meaning may be satisfactorily ascertained. Wind or breath is often used in the Scriptures to signify, illustrate or represent the spirit. He breathed into his nostrils the breath of lives (not life, for the original is plural). Job says (27:3, and 33:4). "All the while my breath is in me, and the Spirit of God is in my nostrils. The Spirit of God hath made me, and the breath of the Almighty hath given me life." See Isa. 2:22. All in whose nostrils was the breath of the spirit of life (Gen. 7:22 margin), see also Ezek. 37:9. Again in John 3:8, the Saviour compares the Holy Spirit to wind; and in chap. 20:22, we learn that Christ "breathed upon his disciples, and said, receive ye the Holy Ghost." At the day of Pentecost the Holy Spirit came as "a rushing mighty wind," Acts 2:2.

Taking these and other passages into consideration, that

which moved upon the face of the waters was as likely to be wind as the Spirit of God. It should be borne in mind that the Bible was written in early times, when allegory was one of the prevailing features of language, and the Orientals at the present day are remarkable for their figurative expressions. That the Scriptures, like all Eastern writings, are not literally true is exemplified in hundreds of instances, particularly in the Old Testament. For instance, Gen. 9:5 reads thus, "And surely your blood of your lives will I require; at the hand of every beast will I require it, and at the hand of man." Now we know that the beast has *no hand*, neither was it the intention of the writer to communicate such an idea. It is merely a characteristic feature of the figurative language of that age. We read also of "a tongue of fire," Is. 5:24; of "the tooth of a rock," Job 39:28; of "the lip of the sea," Ex. 14:30; of "the hand of the grave," Ps. 49:16; of "the eyelids of the morning," Job 3:9; of "the cedars of God," Ps. 80:10, &c., &c. All such expressions occur in Eastern writings, and are what we style Hebraisms. Some argue, however, that the Scriptures are literally true, but it is manifest that such is not the case. We read that Saul and Jonathan "were swifter than eagles," and "stronger than lions" (2 Sam. 1:23). This, of course, is an ironical expression, and is to be viewed in its proper light, meaning great swiftness and strength. We observe that all such phrases as the above, like the Egyptian hieroglyphics, mean or denote something else. Those who maintain that the Bible is literally true, would have some difficulty in deciphering the characters on ancient monuments of past Egyptian glory. For example, the crocodile's eye has no reference to that animal, but is used to signify the rising of the sun, it being the first part of the crocodile, on account of

its brightness, that becomes visible as it rises to the surface of the water, giving the idea of the sun rising. A circle denotes eternity, it having neither beginning nor end; a star signifies God; and justice is symbolized by an ostrich feather, because all the feathers of the body of that bird are equal. The Bible, it is known, was not written in hieroglyphics, still it has its peculiar phraseology, and it is necessary to take this into consideration in order to understand it. The Pentateuch being the oldest record in existence, we may expect to contain symbolic words and phrases that were among the first that were invented through the impulse of mental impressions from external objects. The original framers of language, when they wished to speak of something of which they had only as it were an idea, would naturally, as did the ancient Egyptians, employ that object, substance or figure that would most fully represent the abstractions of the mind. We will find that most of these, as they were the first that man invented, refer to the human frame. We have the span, the palm, the hand-breadth, the thumb-breadth, the hair-breadth, the nail, the ell, and the foot, all of which are taken from the human body. When the first creators of language wished to speak of what we would call a bay or indenture of the sea into the land, the form of the sea in that place would very probably strike the idea of the human lip into the mind, not only on account of its form but its extension from the main body of the head, as the bay extended beyond the main body of the sea or ocean; hence we read of "the lip of the sea." The "eyelids of the morning," in the same light, would signify the dawn of the day, the day-dawn giving, as it were, the idea of the day opening its eyes, the light increasing as we gradually open the eyes. We can, in like manner, dispose of such phrases as the following: "the cedars of God," Ps.

80 : 10 ; " a great city to God," " weapons powerful to God," II Cor. 10 : 4 ; " mountains of God," Ps. 36 : 7 ; " beautiful to God," Acts 7 : 22 ; " a prince of God," Gen. 23 : 6 ;—all of which are rendered great by the adjunct of God being appended, meaning great cedars, a great city, weapons divinely strong, high mountains, &c., &c. *Spirit of God*, therefore, might very properly be considered as meaning a mighty breath or spirit. As the original framers of language employed something that existed around or about them to represent their ideas, would not the air or breath become at once a fitting emblem for anything that might be felt when impalpable to the sight ? Indeed breath is often used in Scripture to signify spirit. We find the Hebrew word for spirit to exactly follow this mental law, meaning air or breath, and the same rule applies to nearly all ancient languages. The Latin *anima*, the soul, is derived from the Sanscrit *an*, the wind : the Greek *pneuma*, a spirit, comes from the root *pneo*, to blow ; our word spirit is from *spiro*, I breathe ; and our word *ghost*, a spirit, comes from the Saxon *gast*, and is the same with *gust*, a sudden wind.

In the light in which this point now stands before us, it would appear very plausible that the Spirit of God here spoken of was, as Dr. Boothroyd and a number of other learned commentators, both Jewish and Christian, advocate, " a mighty wind."

Dr. Clarke, however, and some others, believed it to have been actually the Spirit of God—the Holy Spirit. This was also the opinion of Milton :

" Thou (the Holy Spirit) from the first
Wast present, and with mighty wings outspread
Dovelike sat brooding on the vast abyss,
And mad'st it present."—PARADISE LOST.

But this idea is founded merely upon the Rabbin's explanation of the Hebrew *rachaph*, as meaning, as Milton has it, *brooding*. But would not the air or wind be as likely to be represented as *brooding*, as the Spirit of God? The Rev. Mr. Patton, in his Polyglot Bible, entertaining the same opinion as Dr. Clarke, adds, that this word "means rather a tremulous motion like that of an eagle fluttering over her young, or like that of the bones trembling with fear." Deut. 32:11, Jer. 23:9. But does not this exactly represent the state of the air or wind fluttering, as it were, over or upon the surface of the waters, causing them also to become tremulous or waving? In the Institutions of Menu, so often referred to by commentators, Sir William Jones notes a remarkable passage, "The waters are called *Nara* or the Spirit of God." Well, might not wind be as properly called the Spirit of God, as water?

Another objection to the interpretation of Dr. Boothroyd, is held forth under the argument that "the atmosphere was not yet formed, and therefore could not be agitated into wind." This, however, is a trifling objection, and only goes to prove the very little attention some of the learned have paid to the real meaning of the first chapter of Genesis, to say nothing of geology. It is replied, that the atmosphere was made, renewed and arranged on the second day, and therefore existed before the first day. If not, how did it happen that "there was light" on the first day, and what supported "the waters above the firmament" before the second day? It is certain, that our earth had an atmosphere ever since she had a being, at all events during the long protracted eons of the geologic ages, which budded, bloomed, and closed long before the first day, and, in all probability, survived the closing violence of those distant periods. View-

ing these facts, therefore, calmly in the face, I see no reason why it may not be candidly and fearlessly affirmed that the Spirit of God here spoken of was, as Dr. Boothroyd urges, "a mighty wind," inasmuch as there has been as yet nothing produced in the shape of argument that is capable of showing the contrary; besides in the translation it would have been just as proper, nay more so, to render the original word, by wind of God, as Spirit of God, as the Hebrew *Ruac* is often thus rendered in the Scriptures. If this wind had been merely a breeze, it is not likely that Moses would have styled it a wind of God. but being of great violence, it would occur to him as having the same cause as that "strong east wind," or wind of God, which divided the waters of the Red Sea to afford a passage for the children of Israel. The fact that this wind is here mentioned, denotes that it acted as an instrument in the present creation, otherwise it would not have been mentioned. The Creator, it is beyond probability, either previously caused it through "the last great depression of the land," or directly on the first day, to disperse the smoke and vapors, and elevate the luminous atmosphere that there might "be light."

It is probable that from some obscure tradition of this passage (verse 2), that Homer, Thales of Miletus, and several of the ancient heathen philosophers, held that water was the original principle of all things. Dr. Clarke maintains that though all things originated in God, water was the most abundant of the primeval products. He believed that "God in the beginning created the *substance* of the heavens and the *substance* of the earth," and that the entire terrestrial mass was in a semi-fluid state on the first day. He, therefore, like Sir Charles Lyell, dispensed with the idea of internal heat. "An eminent chemist and philosopher, Dr.

Priestley," we find him saying, "has very properly observed that it seems plain that Moses considered the whole terraqueous globe as being created in a *fluid* state, the earthy and other particles of matter being mingled with the water." The present form of the earth, he adds, demonstrates the truth of the Mosaic account. His conclusion is truly less significant than curious. Could the earth have any other form as long as the water covered the entire surface, as he supposes? No matter in what shape the solid parts of the earth or any other planet may be, if there is a sufficiency of water it will be as much a *spheroid* as if the whole mass was "in a fluid state." According to the Doctor's reasoning and that of his "eminent chemist," the idea of the earth being motionless in space, or its "gravitating power" suspended till the fourth day by "the Almighty power of God," an idea which he immediately afterwards broaches, is vanquished. Dr. Clarke seems to urge that the whole terraqueous globe was in a fluid state on the first day, but such was not the case. In verse 1 we read that the earth was without form and void. Now, it is evident that it is the earth's surface that is here referred to, and not the whole earth as a sphere. Moses did not mean to say that the earth was not a globe, but merely that its surface was then in a rugged state. If the earth's surface had been only water, the whole, or any part of it would have had form. Some portions of solid earth must therefore have protruded out of the water; and, verse 9, as already observed, proves that there was land above the surface of the water before the third day.

And the earth was without form and void. What we are to understand by this sentence is simply that the land was principally invisible, and that the entire surface presented no trace of organic life. Those parts of solid earth which then

peeped above the surface were probably the summits of mountains or ranges of elevated tracts of land, rendering the surface uneven, *without form*. "The original term *תהו* *tohu* and *בהו* *bohu*," says Dr. Clarke, "which we translate *without form and void*," are of uncertain etymology; but in this place, and wherever they are used, they convey the idea of *confusion* and *disorder*," but we might add not a "chaos," as he teaches, but rather the opposite of *form*. The earth's surface was then in a *disordered* state, as the waters were confused with the land, spreading over the whole terrestrial surface, in the valleys, and reaching nearly to the highest portions of land, and hence they were, as the Bible teaches, in more than "one place." "The *tohu van bohu* of Moses, which is thus translated in our English Bible, means," says Dr. Hitchcock, "simply and literally, *invisible and unfurnished*." This is the meaning which the old Jewish writers, as Philo and Josephus, attached to these words; and they have been followed by some of the ablest modern commentators. "It is wonderful," says Rosenmuller, the elder, "that so many interpreters could have persuaded themselves that it was possible to detect a chaos in the words, *תהו ובהו*. That notion unquestionably derived its origin from the fictions of the Greek and Latin poets, which were transferred by those interpreters to Moses. If we follow the practice of the language, the Hebrew phrase has this signification: *The earth was waste and desert*, or, as others prefer, *empty and vacuous*; that is *uncultured and unfurnished* with those things with which the Creator afterwards adorned it." This, of course, has reference to the earth's surface. It was the surface that was without form and void, and not the whole watery world. Moses did not intend, if he knew, to convey the idea that there were no animals in the water, but only

that man and other terrestrial animals did not then exist. The dry land was named earth, and he doubtless knew this before he commenced to write. It was, therefore, the land that was without form, and its surface that was void.

And God divided the light from the darkness. And God called the light day, and the darkness he called night.

It is possible that these words may not be from the pen of Moses. Like many passages in the Pentateuch, which the sagacious Colenso has picked out and criticised, to which we will have occasion afterwards to refer, they may have been added as marginal notes or glosses by some subsequent transcriber, and finally, through carelessness, got into the original text. I see no reason why Moses should use these words, though perfectly true, as the same thing is the result ascribed afterwards to the sun and moon. This opinion seems strengthened by the position of the sentence, "And God saw that it was good." This is found annexed to every completed act of the Creator, and precedes the close: "And the evening and the morning," &c. Hence the text, in all probability, originally read thus: *And God said, Let there be light, and there was light. And God saw the light, that it was good. And the evening and the morning were the first day.*

From the delay in adding, *And God saw that it was good*, (verse 12,) it appears that He required everything in His creation to undergo a process of trial. When He produced the vegetable kingdom on the third day, He did not pass on to the making of the sun till the trees bore fruit. It was, perhaps, necessary, in order that He might pronounce it *good*. Each day of the creation, therefore, must have been a lengthy period. But some will be ready to ask, does not God know all things? and could He not have created all this which is said to have been created on the third day, in twenty-four

hours? We answer in the affirmative, but it appears He did not choose to do so. We might ask, why He did not create all in one day, instead of six, or why not in a moment? One question is about as much to the point as the other. The question, is it reasonable (as I have been asked) that the third day was such a long period—that God required several years to complete the work of the third day, exhibits about as much good sense as to enquire, why God is so long in evangelizing the world? Why did God take so much time then, is similar to, why does not God save the world in a shorter period? *Why did he* in the one, is the same as, *why did he not* in the other? If we are to judge from the text, the Creator did not pronounce the vegetable kingdom *good* till it was in a state of maturity. It is true that He foreknew their adaptation to His purposes; but because God knows what will take place in the future, does it follow that He should immediately pronounce judgment? For the reason that He knew how Abraham would act in offering up Isaac, did it follow that his faith should not be *tried*?

“And the evening and the morning were,” &c.

Let us endeavor to find the meaning of this sentence. The Sabbath was instituted by God as a day of rest, not only that man should have a season of desistance from labor, as God had from his, but more especially to commemorate the desisting of the Creator from producing a new creation, thereby reminding all men of the Divine goodness towards His creatures, that He wrought that they might enjoy. The Sabbath was to be celebrated by the Hebrews from even unto even, according to the command of Moses, Lev. 23: 32, that is from the going down of the sun till the same again. “The Hebrews,” says Dr. Clarke, “extended the meaning of the term evening to the whole duration of night.” Now, if the

seventh day was to typify God's resting, is it not reasonable that six days should typify his working? God required the Israelites to complete all their work in six days, and rest from it on the seventh, as He did from His. Then, as the Sabbath was set apart to remind the Israelites of the labor of God, and, therefore, His goodness, would we not expect also a type of creation in each of the six days? If not, why did He require that the days should have a peculiar division? Would it not have been more natural to begin the day when the sun began his course, or "to rule the day" for which he was ordained; and it was the light that God called day. The reason appears to be this, God required that they should begin their day at even, that the darkness or night, and light or day time, should symbolize His work in *creation*, as the Sabbath did His *rest from creation*. Darkness denotes *rudeness* or *illness*, and light or day *perfection*; hence "the evening and the morning" would signify a state of ruin to a state of perfection, as the night ends in day, thus typifying the power, wisdom and goodness of God in bringing light out of darkness, good out of that which was ill, perfection from that which was imperfect. The account of the creation was given to the Hebrews to show that God was their Creator, and, like the Passover, was to be kept in memory by some particular figure: and as the Pentateuch was written after God gave to Moses the limits of the day, we may very properly infer that the words—*the evening and the morning*—or, which is more expressive in the original—*the evening was and the morning was*—were merely added to teach through symbol, the prominent feature of ancient thought,—not only their duty to God as their benefactor, but as their Creator.

CHAPTER VIII.

THE SECOND DAY.

THE ancients had little knowledge of many of the fixed laws of nature. As they had not the faintest idea of the rotundity of the earth, so they had no conception of the extent of the atmosphere or its agency in creation. The Hebrews believed that God caused it to exist on the second day for the purpose of dividing the waters from the waters, and hence they conceived that the waters above the firmament were, as those beneath it, existing in the form of widespread lakes, and that as the earth, as they supposed, floated upon the waters beneath the firmament, so the waters above the firmament floated upon the firmament. Rain, they imagined, was the water above the firmament let through holes or spouts, which they supposed the Creator opened at pleasure; hence we read of the windows or flood-gates of heaven being opened at the time of the deluge. It is plain that these notions originated in the account or revelations of the second day (and therefore it could not have been that Moses understood anything in connection with his composition but the object in view). It would be natural for the Hebrews to think, that when there was a division of anything, a part in one place would be the same as a part in another. These waters above the firmament they believed to be seated at a great height. The Psalmist says, "Praise Him ye heaven of heavens, and ye waters that be above the heavens."

It has already been shown that the atmosphere existed on

the first day, (though in an imperfect state), and therefore existed during the geologic ages. Indeed, the structure of the animals of the different geologic series proves undeniably that an atmosphere then existed, as now. As the earth was then surrounded by a luminous atmosphere, and hence there being an equal temperature everywhere upon the surface, it is abducent that during those remote ages there was no such thing as rain, but a copious dew, as in Eden, watered the whole face of the ground. The polar regions, like the countries near the equator, enjoying a moderate temperature, the vegetable kingdom must have been everywhere rank and abundant, a fact fully demonstrated by geology. There could have been no winds, as in the present creation, for the equilibrium of the atmosphere being never disturbed by unequal temperature, the air must have ever been tranquil. It is, however, not supposed that there was no such thing as a breeze, for this would be a natural consequence arising in the same manner as our land and sea breezes, the surface of land being more speedily heated than that of water, through extrinsic heat.

The atmosphere is the great agent in supporting and carrying on the immense workshop of nature, as without it, animal and vegetable life could not exist, and as its constituents are being continually converted into solid substances and deposited on the earth, an idea that no way clashes with the teachings of science—it is apparent that all organic life would eventually dwindle and die away, was not the deficiency supplied from some source at different intervals, which we can refer only to the Almighty hand. It is in some measure probable therefore that it is the atmosphere that calls for a new creation. That the atmosphere is decreasing in intensity, may be inferred from the great perfection of the

animal and vegetable worlds during the geologic ages, and it does appear from geology, that the Creator refined the atmosphere at least at two different periods; once immediately on the dawn of the Carboniferous age, and once in the times of the Tertiary. The protracted life of the antediluvian patriarchs would argue somewhat in favor of this opinion in contrast with the limited period of our own. Indeed, that the atmosphere is becoming at least *relatively* lower is within the limits of demonstration, and if lower it must be ever becoming more rarefied. Is not our globe continually enlarging? Do not the strata prove this to be the case? Then the atmosphere must be continually decreasing in height, even allowing it to suffer no loss in the earthy deposits, for it gradually covers a larger surface. Besides, if our earth is cooling like a comet, as Dr. Dodd imagines, and which is urged by nearly all geologists, our planet is additionally enlarging; for earthy substances contract when heated, and expand when cooling. All this seems confirmed by the Mosaic account; for Mount Ararat, upon which we are taught that Noah's ark rested, is now in the region of eternal frost. Then if the atmosphere is lower and consequently rarer than during the antediluvian ages, our earth at present enjoys less light and heat; and light being a preventative to disease, and conducive to long life, the animals before the flood, and, we might add, those of the geologic ages, enjoyed more and lived longer than at the present day.

The atmosphere on the first day, before it was renewed, must have been greatly exhausted, inasmuch as there was then no division of the waters from the waters, *i. e.*, the clouds and vapors floated upon the bosom of the deep; but when the Creator added to the atmosphere, these naturally rose to higher regions, and hence left a transparent space, which is

represented as an *expansion* (verse 6). This rarity of the atmosphere could not have been owing to the change that closed the final geologic period, as it could not possibly have been in this manner affected by it, neither could it be urged that it decreased during the time which elapsed between that event and the morning of the Mosaic creation, as there was nothing to exhaust it but the animals in the water; besides this was a very limited space. It is probable, that it had been exhausted after performing its part directly, and indirectly supporting the animal and vegetable kingdoms in the last geologic periods, likely in "the age of great mammals." And will not the present atmosphere require to be renewed? Is it not running towards and drawing near the end of its race? Has it not, even in the short space of less than six thousand years, become weakened and imperfect? The life of man is continually on the decline, following, as it must, the decline of the atmosphere. Is it not vain then to suppose that the days of the creation were each so many millions of years in length, as taught by Mr. Miller? Would not the atmosphere have called for a new creation several times in each day? The day is hastening when this atmosphere will again be augmented and renewed, and in its purity will be inspired by the lungs of the blood-washed throng, that will never canker, when sickness and sorrow shall be no more.

The atmosphere is one of the grand actors in the support of terrestrial life. Did it not attend our planet in its ceaseless revolutions round the sun, creation would be a failure, and our planetary sphere a blank in the universe. Everything that lives, moves, and dies, owes existence to it,—all beauty, richness, and fragrance, the brightness of day, the glory of the seasons, and the flowery vale. Without it, earth would be a foul wilderness, a dreary waste, a hideous wild! Even

to the eye of the wandering angel groping in gloom profound, nothing would appear but terrifying chaos and horrible ruin. Eternal darkness would never withdraw its terrors, the solar orb would refuse his beams, and the pale monarch of night would be forever hid behind the dismal curtain of the skies. Light would never beam—melody would never breathe—beauty would never smile ; no day would shine, no flower wave, no life revive,—all, all, dreary, doleful, dark !

Animals, even could they exist without respiration, would have nothing on which to subsist, neither could they enjoy the harmonies of the ear, as there would be no such thing as sound. But, suppose that vegetation could flourish without the atmosphere, and that animals could live without breathing, *life* would be but mockery—for their bodies being earthy, and undergoing no reviving change, would speedily and continually enlarge, to either perish through lack of food, or by immense collections of incumbent matter that would close and collapse the vital organs. The Creator, however, in His infinite wisdom, has furnished a means, while at the same time putting in the key that secures a creation, to counteract this tendency. As it is necessary that the bodies of animals should be incessantly undergoing change, that life might not be a burthen, and of a moment's duration, the All-wise Being has appointed the plan of breathing, which process causes the oxygen of the air to combine with the carbon of the blood, forming carbonic acid gas, which combination is exhaled, and in this manner the carbon is removed from the system. It is calculated that the human body is entirely renewed in the short space of seven years. The old particles are disengaged and floated away upon the crimson streams, and their absence furnished with a fresh supply. The fleshy walls are in this manner renewed annually, and the bones

septennially. Hence, in the past seven years, we have had seven bodies of flesh and blood, and one frame of bones.

It does appear, however, that some animals can and do exist without breathing. For instance, we are informed of several cases in which living animals have been found enclosed in solid bodies. In 1764 a toad was found in a mass of stone dug out forty-five feet below the surface, from a quarry in Lorrain. "In the trunk of an elm, three or four feet above the root, and precisely in the centre, was found in 1719, a live toad of a moderate size, thin, and which occupied a very small space. As soon as the wood was cut, it came out and skipped away very alertly. No tree could be more sound. No place could be discovered through which it was possible for the animal to have penetrated, which led the recorder of the fact to suppose that the spawn from which it originated, must, by some unaccountable accident, have been in the tree from the very first moment of its vegetation. The toad had lived in the tree without air, and, what is still more surprising, had subsisted on the substance of the wood, and had grown in proportion as the tree had grown." This fact was attested by M. Hebert, Professor of Ancient Philosophy at Caen.* About twelve years after the above incident, another toad was found in a large oak, which, from the size of the tree, it was judged must have existed without air for eighty or one hundred years. But this animal is not the only one that has been thus found. Two living worms were discovered in the centre of a huge block of marble, in Spain, which the sculptor was carving into a lion, for the royal family. In 1772 an adder was found alive in the middle of a mass of marble, thirty feet in diameter; but when taken out, it died in a few minutes, being unable to support the air.

* Wonders of Nature and Art.

Now the question arises, how is it that those animals, secluded from intercourse with the air, could possibly survive? It is answered that there are some animals that can live without breathing, having the *foramen ovale*, an opening between the ventricles of the heart, unclosed. The serpent tribe, toads, alligators, and nearly all insects fall into a state of torpidity during winter, and yet live in perfect health though the heart and lungs have suspended their motions, and the vital fluid has ceased to flow. In all these the *foramen ovale* of the heart never closes. This is the case also with the raccoon and other burrowing animals; and it is well known that it is this very circumstance that renders some animals amphibious. Human beings however were intended by the Creator for a different sphere of intercourse. Man was destined to be ready for action in all circumstances and in all seasons. It is therefore a rarity to meet with a person of this description. Instances nevertheless of this nature have been more than once witnessed. Different anatomists have testified that they have met with adult subjects in which the *foramen ovale* of the heart was open. Persons of this peculiar habit can neither be hanged nor drowned. God be praised that all men are not of this organization! "Mr. Derham, in one of his notes, mentions several persons who were many hours and days under water, and yet recovered, and one who even retained the sense of hearing in that state. And Dr. Platt mentions a most curious instance of a person who survived and lived, after having been hanged at Oxford, for the space of twenty-four hours before she was cut down. The fact was notorious and her pardon, reciting this circumstance, is extant on record.*" The unborn child, as its lungs are inactive, could

* Meth. Mag.—Eng.

not live was it not that the *foramen ovale* is always open, but gradually closes after birth. This is why the very young infant requires little air, and can live where the mother would perish. We have read of instances of persons being buried, and, when on being disinterred, were found to have struggled and turned over in their coffins—the face being in such cases downwards. Others have been placed in tombs, and, having revived, were heard and fortunately rescued. This apparent slumber of the involuntary powers is designated a *trance*.

These facts have supplied the friends of revelation with the ability of silencing the sceptic and infidel in reference to the prophet Jonah being swallowed by “a great fish.” All that is necessary in the case is to suppose that Jcaah was one of those in whom the *foramen ovale* of the heart had not closed. He could, and apparently with no greater inconvenience than he justly merited—survive in the fish’s stomach, for the organs of digestion will act upon nothing that retains the living principle, or we could expect to find the stomach itself to consist of indigestible material ; and it is well known that living animals as frogs, lizards, and snakes have remained, lived and even multiplied in the human stomach, without its gastric secretions producing the least injurious effect upon them. From different sources we also find that small fishes, having been devoured by large fishes of prey, have, on being set at liberty, swum alertly away, apparently unaffected. While these animals are in the stomach, there is generally a great disposition to vomit. I once knew a boy, about ten years of age, being for some time extremely emaciated, the cause of which neither parent nor physician knew, to vomit up a lizard while in the act of drinking milk, which he much desired to be brought him. The animal, falling upon the table and

finding itself excluded, made every attempt, by writhing and jumping towards its foster parent's mouth, to regain its accustomed abode. The boy afterwards became stout and fleshy, by satisfying an appetite less craving than before. Had this reptile continued in the stomach, death would have been inevitable. In the case of Jonah, therefore, the fish must either die or get rid of his dinner; the consequence of which was, the prophet was emitted on dry land. Mr. Taylor, however, argues that the *dag* of Jonah was not a fish but a vessel. Many other cases in reference to the *foramen ovale* of the heart being open might be mentioned, among whom might probably be ranked the apostle Peter.

It might be remarked that these facts would no way compensate for the supposed absence of the atmosphere on the first day, even though every animal in the water may have been of this peculiar structure, for as nothing in the line of vegetation will survive without it, so no animal can continue to live without the existence of some genus of plants or other productions of the atmosphere. There are some fishes that prey upon the smaller, as the whale and the cod; still their food is dependent upon an aerial source. In fact, I much doubt that animals could possibly keep below the surface of the water (as that element is almost incompressible) if there was no atmosphere, and therefore Moses could not have said that the earth was *void*. But these remarks are nonsense, when we take into consideration that every animal tenement is as dependent upon the air as it is upon the food that sustains it. But if there were air-breathing animals before the first day, why not then? Those among the *little read*, who are not satisfied that fish are air-breathing animals, may easily convince themselves by placing two or three small fishes in a jar of water under an air pump receiver, when

they will be seen to rise to the surface with the back downward on excluding the air.

The principal elements that compose the atmosphere are nitrogen and oxygen. These are found to be nearly in the same proportion in all climates, and at all altitudes. Oxygen is the most abundant and widely diffused of the elementary bodies. It forms three-fourths of the substance of animals, of vegetables four-fifths, and of minerals one-half. It forms eight-ninths of water, and one-fifth of the atmosphere. Hence it forms about seven-twelfths of the whole creation. It is upon oxygen that all animal life depends. If a mouse, for example, be taken and placed in an atmosphere of any other gas or combination of gases, containing no oxygen, it will speedily die. Therefore, if oxygen was less abundant in nature, the lungs of animals would require to be proportionally larger. On the other hand, if the animal be placed in pure oxygen it will die in great excitement, and even of delirium. If oxygen and nitrogen were in equal proportions in the atmosphere, animals, instead of enjoying self-control, would suffer from insanity. This mixture is given by play-actors to young persons for the purpose of creating sport, for as the mixture contains more oxygen than can be readily consumed, it deranges the nervous system, giving an unnatural vivacity to the brain. It is hence styled *laughing gas*. Oxygen is used in a number of ways. We eat, drink, breathe, and burn it. The human race, it is estimated, consume nine hundred thousand pounds daily, that the lower animals consume double that amount, and that in the system of nature not less than seven thousand million pounds are used daily.

From this enormous consumption we discover that if there was nothing to restore the oxygen to the atmosphere the animal races would soon perish ; but this is supplied in the

constitution of the vegetable kingdom. While the animal creation devour the oxygen, and tend to fill the air with carbonic acid gas, which they throw out at each respiration, the vegetables decompose the carbonic acid, absorb the carbon, and assimilate it to their own substance, while the oxygen is set free. Had the Creator permitted the waters to partially overflow the land, giving rise to swamps and marshes, the vegetable kingdom would be rank and flourishing, while the animal would in time languish and die. In such countries, for instance, as the West Indies, where vegetation is vigorous and rapid, and the soil loaded with decomposing carbonic matter, the plants absorb more carbonic acid than they require, and hence, instead of freeing the oxygen, they throw off carbonic acid gas. The atmosphere, during the geologic ages, it appears, was of a much greater density than now, and therefore would support the animals if they were numerous, perhaps as long as necessary, even was the earth's surface in this state. But if our atmosphere was double its present density, our earth would be a picture of commotion, of which the present phenomena are but faint representatives. The raging hurricane, which the Greenlanders at certain seasons endure, and the terrible simoom to which the African is exposed, exhibit but a miniature violence. In fact the every-day wind would write destruction in its path, while every animated organism would perish before its shrieking vengeance. Rains would seldom cease, and hurricanes would seldom calm; to-day would congeal, to-morrow dissolve; and, in short, Nature itself would answer but for a battle-field of the warring elements. But it might be asked, if the atmosphere was of such a density during those long-ago periods, did not the animals suffer similar disasters? It is replied, that as the luminous atmosphere encompassed the

whole terraqueous globe, a universal temperature everywhere prevailed; and, hence, as there was no cause of violent winds, no violent winds blew.

When we take into consideration the important part the atmosphere performs in the great alchemy of nature, we are driven to the conclusion that nothing short of an infinite mind could have contrived such a laboratory of wonders. While it continues to support the vital spark of the most unwieldy terrestrial machine, to the most tiny organism, it is at the same time laboring in great and small to recover the loss it has sustained. While it welcomely receives the millions of animated fabrics that are momentarily emerging into being, and freely moves them on upon life's wavy ocean towards the castle of perfection, it is engaged in rallying a reinforcement from the millions of corporeal organisms that are undergoing dissolution. The bodies of these it dissolves into gases and vapors, which, before the process of decay is complete, it has transmuted to live again in the form of vegetable or other animal. It takes part in all those chemical changes that mark the transfiguration of the organic creation. The fermentation of bodies, the combustion of woody fibre, the evaporation of water, the breathing of animals, and the respiration of plants,—all are regulated and carried on by the atmosphere. In either point of view the result is truly prodigious. Within the precincts of the single city of London, not less than three hundred thousand tons of coal are annually consumed.

As it required an infinite mind to devise its properties and plan its operations, so nothing short of it could comprehend the enormity, and yet the completion of its labors. It is the vast receptacle of all the decayed matter of six thousand years. Though more than fifteen billions of human beings, and almost

an infinite number of the lower animals have crumbled beneath the consuming hand of time, the remains of which it has sifted and diffused from shore to shore, from continent to continent, and perhaps from pole to pole : yet it has employed every scattered atom in reforming, refitting, and refining, in building and perfecting the same, or other departments of the organic creation. With comparatively little exception, every particle of all those tenements of "the master-piece of creation," is still in connection with our own sphere, and through the operations of the atmosphere, is engaged in other branches of nature in constituting living structures of perhaps a far different genus. The bodies of Adam and Eve may, it is possible, have entered into the composition of the bodies of the lower animals, or the forest trees.

To what height the atmosphere extends, is not definitely known. Many ignorantly deny the possibility of us having the least idea of its altitude. We are, nevertheless, certain that it does not extend to the sun, or our nights would be nearly as light as day ; and, as it could not move with the planets, they would be forcing a passage in their orbits, and hence, our earth would know other winds than those blowing west. If the air extended to the sun, the planets would either be stopped in their courses, or driven to atoms by the dreadful hurricanes, animals could not move on account of the great pressure, and the clouds would hang in the regions of the moon. The air cannot extend to the moon, for as she travels round the earth, she would be liable to lose her seat in the heavens. In a word, none of all the planets could move if the atmosphere extended throughout space. It is evident, therefore, that the air is lower than the moon, and, as she would attract it to her surface if it was proportionately nearer, it follows that it could not possibly extend to a greater

height than four thousand five hundred miles. But even did it extend thus far, our earth in its present relation to the sun, would be a heap of ruins. The exact height could be ascertained, if the duration of twilight was precisely known. It is generally reckoned from the setting of the sun, till he is 18° below the horizon, *i. e.*, in the temperate zones; at the equator it is much less. From this it is calculated that the atmosphere reaches to the height of about forty-five miles. By indications of the barometer, it is found that the air at an elevation of eighteen thousand feet is half as dense as at the level of the sea, and as its densities decrease in a geometrical proportion, it will be found that at the height of thirty thousand feet it is one fourth, at fifty-four thousand, one eighth, &c. This gradual decrease in density supplies sufficient data to calculate the height at which it would altogether cease. The greatest height ever reached by man was attained by Gay Lussac, who, in the year 1804, ascended to the height of twenty-three thousand feet. At such high elevations the greatest change is observed,—the imperfection of light and sound, and the lowness of temperature. Aeronauts have stated that in those high regions the heavens assume the aspect of profound gloom, where nothing is visible, which shows that above our atmosphere even the orb of day would be by mortal eyes forever unseen. Upon the summit of Mont Blanc the report of a pistol at a short distance is but faintly heard, and persons to converse must be near each other. On the other hand, if air extended through space, sound would be as perceptible at a great height, as at the earth's surface. In fact the air would then be sufficiently dense for us to converse with "the man in the moon." The aeronaut could then soar from one planet to another, providing there was buoyancy to elevate the balloon. In the Arctic regions, in consequence of the

density of the air, sound is heard at great distances. Persons living in Lapland and Siberia can hear each other when a mile apart. Dr. Jameson affirms that he heard a sermon distinctly at a distance of two miles. If there was no air, there would be no sound, for sound is but the impressions of the vibrations of the air upon the ear. If a tuning fork be struck in a vacuum, no sound will be heard, though the fork's vibrations can be distinctly seen.

But the imperfection of sound is not the only inconvenience that the traveller meets with in the lofty regions of the air. When Gay Lussac was at his greatest height, he breathed with much difficulty, and felt a peculiar itching sensation in the ears, which, as he continued, became so distressing, as to almost assure him they were at the point of bursting. When Humboldt was ascending Chimborazo, he found, on nearly attaining its summit, that his lips cracked, while blood freely oozed from his ears and eyelids. The same phenomenon was experienced by Dr. Ischudi, when upon the table-lands of Peru. At such elevations, persons are easily wearied. Very little exertion, as, for instance, a few strokes with an axe in the ice, will bring on prostration. The air being in such a state of rarity, animals, such as goats, that generally live upon the tops of high mountains, are found to have much larger lungs than those upon the plains beneath. This is a natural consequence, for as they require as much oxygen as if in the valleys, their lungs will require to present a larger surface, to collect a sufficiency of air. They are not however as large in proportion as the rarity of the air increases, as this tendency is counteracted by the greater frequency of breathing. The vascular system, therefore, is in greater action, and hence the circulation being more rapid, animals that live upon mountains are much shorter lived than those

that live in the valleys. The animals that lived during the geologic ages, as the atmosphere was beyond probability more dense than now, must have lived to a great age. All these observations go to prove the wisdom and goodness of the Creator, in forming the atmosphere. What if He had formed it otherwise than it is? Suppose it to have been made of half its present density, what would have been the result? The tides would deluge the greater part of the dry land now upon the earth's surface; and the snow-line being lower, and the rays of the sun less active, the ocean would quickly be filled with ice, and every lake and rivulet would be forever congealed. It is true that animals, could they exist, might not suffer in a similar manner to the traveller, who attains the mountain summit, as the extrinsic air would be counterbalanced by that internally, yet their food would be difficult to obtain, and hence the great exercise demanded in procuring it, where little vegetation could flourish, would lead to weariness, discouragement, and depression. Man, the lord of creation, also, would differ widely from the plan of the Creator. He would be void of that noble and graceful form, intended by the Divine Architect, as his lungs would be sufficiently large to destroy his comeliness. His stature would be low, his aspect mean, his vision and hearing imperfect, and his life of but short duration. Notwithstanding all his wit and skill, his efforts to avail himself of the pleasures enjoyed by the ignorant savage, would be useless and vain. Even his victuals would be denied the preparation, as in civil society, for animal food could not be palatably prepared by all the fires he could kindle. If we make an opposite supposition, the result would be equally disastrous. Who, when considering these facts, will not be ready to exclaim with the Psalmist, How marvellous are thy works, O God; in wisdom hast Thou made them all!

CHAPTER IX.

WOMAN.

THE origin of the human species is one of the most important and interesting facts recorded in the Pentateuch. Had the pen of inspiration been silent on this, the sceptic and the infidel would be supplied with a greater force of argument; and would court and carry a greater sway in the Christian world. Instead of man being a perfected species of monkey, or derived from a source among the lower orders, we are informed that he had a distinct origin, and though created from the dust of the ground, was primevally made in the image of God, possessed of that talent and intellectual greatness which characterize him as the master-piece of creation. Geology testifies, as the Bible pointedly teaches, that he had a *distinct* creation, and, therefore, has no connecting link with any other branch of the animal kingdom. The infidel, with that speculative audacity and scheming acuteness which has ever distinguished the infidel character, has at length been silenced upon the grand point of his reasoning by the incontrovertible testimonies of geology, and we are glad to say that the arrows which he drew from his quiver, and which he was confident would pierce Christianity to the heart, have rebounded from her iron breast-plate, blunted and broken. The believer can ever say with old Ward :

Fire on, fire on,
I value you not a pin ;
If you are brass on the outside,
I am good steel within.

We read that man was made of the dust of the ground. Some of the modern critics explain this of "minute corpuscles of elementary bodies," while others suppose that it was intended to show our humble origin.

"How poor, how rich ! how abject, how august !"—*Young*.

The name Adam, meaning *red earth*, it is likely, refers either to the particular mould from which he was formed, or to the "blush or flesh-tint of the human countenance."—*Bagster*. The formation of Eve is not distinctly stated in chap. 1, as it is but a brief summary of creation. She is only hinted at in the words "male and female, created he them." From this some of the Jewish Rabbins conjectured that Adam was at first an hermaphrodite ; "but the fact seems to be," says Mr. Patton, "that Eve was virtually in Adam at his first formation ; and her being taken from him was no more a new creation than was the birth of Cain or Abel, in the ordinary course of nature." If this is true, we have another proof of the lengthy period of the days of the creation, for Eve was made on the same day as Adam. But I doubt such an interpretation, for the description of Eve's formation will not bear this conclusion ; and the word *made*, or rather *builded*, indicates that woman did not spring from man in the manner hinted at above, but, as the Scripture teaches, made from a piece of his side. Hence the apostle says, that "the man is not of the woman, but the woman of the man." And if we say that Adam was a hermaphrodite, why not say similarly of the lower animals ? It is natural, however, for man to try to twist miracles which are only the workings of God in an *unknown* channel, to have a correspondence with the established laws with which he is only acquainted. Woman was made of a rib with the flesh, as we deduce from the words of Adam, "This is now bone of my bone and flesh of

my flesh." It might be supposed from the smallness of a rib, that Eve was at first not larger than an infant, and the word woman here used, truly does not signify an adult, but only the feminine sex, the original Ishshah, being the feminine of Ish, *man*. We read that at the birth of Cain, Eve said "I have gotten a man (not a child) from the Lord." But it is better to consider, not that the rib and its attendant flesh formed her entire body, but only entered into its formation, both to show the unity that should exist between the husband and the wife, and to teach in a very brief, yet striking manner, the regard he should have for her.

Notwithstanding the creation of man in the image of his God, the work of creation was not completed till the Deity had provided everything that was conducive to the happiness of his creatures. All the other departments of the animal kingdom were complete, inasmuch as they consisted each of a male and female, "but as for Adam there was not found an help meet for him." There was no creature that was fit to associate in his company; hence God said "I will make an help meet for him," or rather "a help as before him," *i.e.*, a female, as in the animals he saw before him (Parkhurst). Some have supposed that Adam was furnished with an extra rib for the creation of the woman, but such conjectures are not to be followed. God is never at a loss to complete his purposes, no matter when he designs. The deep sleep which God caused to fall upon Adam was probably, as the LXX. renders it, an *ecstasy*, and hence Adam may have had a view of Eve at her creation, which rendered him the knowledge to exclaim "This is now bone of my bone," &c. This was perhaps necessary, that he might have a visible proof that God was their creator. Eve was not thus named till after their expulsion from Eden, and it is very likely, as she

was named immediately after the promise of the Redeemer, that the term had a particular reference to Him who should restore them to the happiness they had so lately lost. The word Eve is a corruption of the Hebrew *Chavvah*, which signifies *life*; and it is remarkable that a rib which became, as it were, the mother of all living, was pierced on Calvary, that all who believe may have everlasting life. I am very much inclined to believe that the rib out of which Eve was formed has reference to the crucifixion, and hence teaches a universal salvation, that as all living had life in Eve, so all through repentance and faith may have life in the Messiah. I leave it with the reader to judge, and to form his opinion of this chapter, which Dr. Colenso attributes to the hand of his "Jehovistic writer," and pronounces as "not historically true."

In verse 15, chapter 3, we have the account of the promise which God made to Eve, that a Saviour should come in the future to subdue the Evil One. Adam had neither lot nor part in the matter, but only "stood one side," and, after hearing the gracious promise, readily gave her the name of Life. The way in which salvation should come, was made known to Eve in the words which were uttered to the serpent, "it shall bruise thy head, and thou shalt bruise his heel," *i. e.*, the Son of God. The word *head* denotes power, and has a spiritual meaning; while *heel* has a temporal, that is, that Christ should vanquish death, and him who had the power of it, the devil; but His heel should be bruised, or in other words, His body should suffer in the conflict. But the battle is now over, and, bless God, the victory is won. Does this passage not prove that Christ was in the Divine nature, and was the second person in the Godhead? His heel was bruised, but his head, his spiritual power, his Divinity was not subdued.

It might be remarked here, that if Dr. Colenso's conclusions are true, our first parents had no promise of the Messiah.

We have said that woman was not intended as the head of creation, still the reader is not to understand that Adam was, on the whole, the superior ; the contrary is rather the truth. That shameful accusation that Eve was the cause of the fall, has ever been laid upon the head of guiltless woman ; and we are sorry to say that few have ever taken up the pen in her behalf. The fact is, Eve was not the cause of the fall, but was only through innocence, and the insolence of Satan, involved in it. The serpent, it is probable, completely charmed her, perhaps both by his mental impressions, and his alluring and deceitful language. Why did she eat of it ? To break the command of God ? Nay, this was the very first reason she gave that she should *not* eat of it. The only reason that she did so, was, as she honestly and truthfully acknowledged to the Divine presence, after the fall, "The serpent beguiled me, and I did eat." This very reply is a proof-positive in itself of her uprightness, and candor of soul. But we cannot, in truth, say anything of the kind of Adam. Did he not know well that the woman was innocent in her heart, and yet he vilely cast his offence upon the pure innocence of his devoted partner ; nay, further, he desired to involve all Heaven in the fault by casting the blame upon Jehovah himself. "The woman thou gavest to be with me, she gave me of the tree, and I did eat," Gen. 3 : 11. But was woman personally forbidden by the Deity himself to eat of it ? I very much doubt it. Was not the command given to Adam before Eve's creation ? It was. God did not say, in the day ye shall eat of it, but "in the day thou shalt eat of it," &c. If man therefore had not eaten of the forbidden fruit, though woman had, there would have been no such thing as "the Fall," and it seems plain that Eve found no change and

exhibited no marks of injury till after the man had eaten, otherwise he would not have tasted it. This was, doubtless, the reason why he ate of it. He supposed it was not so bad as he imagined. It is true the woman said to the serpent, that God commanded saying, "Ye shall not eat of it," still she was correct and excusable, as she considered what Adam appeared to nearly forget, that she was a part of her husband, and hence one and the same, "they twain shall be one flesh." It is, therefore, a certainty that she was not personally forbidden by the Creator, and where there is no law there is no transgression; but she, considering what Satan had said to her, whom she doubtless believed a harmless being, and seeing the beauty of the fruit, that it was good for food, and particularly a tree that would increase the happiness of her husband, the nearest thing but Jehovah to her heart, "she took of the fruit thereof, and did eat, and gave also unto her husband with her, and he did eat." But why did Adam eat? did he not know the very moment she brought it to him, that if he ate of it, his ruin would follow? Most certainly, but he nevertheless did it with "his eyes open," fearless of the consequence in breaking the Divine command. Woman was at the very first the weaker vessel, and of this Satan took advantage, and his scheme was successful in proving that Adam loved the creature more than the Creator, and hence his downfall. It is very probable that Satan could not have directly caused the Fall in persuading Adam to eat of the forbidden tree, or likely he would have tried it before Eve's formation, and therefore the woman became subject to a continued punishment even greater than that of man. I know of no other way to account for the pronouncement that her sorrow in conception and childbirth should be increased, and that she should be under the entire control of her husband, which is, in too many instances, her greatest punishment.

Nowhere in the Scriptures is the cause of the Fall attributed to woman. When spoken of, it is always in such terms as to have no reference to her. "Wherefore as by one man sin entered into the world and death by sin, so death passed upon all men for that all have sinned." Rom. 5:12. "For since by man (not woman) came death, by man came also the resurrection of the dead. For as in Adam (not Eve) all die, even so in Christ shall all be made alive." I Cor. 15:21, 22. "And Adam was not deceived: but the woman being deceived was in the transgression." I Tim. 2:14.

Eve was a more refined being than Adam, though she was not placed at the head of creation. It was not designed that she should be kept in restraint by her companion; for the part of man, of which she is represented as having been formed, was not taken from the feet, that she should be trodden upon, nor yet from the head, to be the ruler, but from somewhere near the heart to be the object of his affections. If we move step by step through the works of creation, we will find that the most insignificant creatures were the first that were formed, in the same way as the most simple were the first, as geology proves, that inhabited our planet. As we move on through the *days*, every succeeding order is a step higher than the immediately preceding, and so on through the entire series. Woman, therefore, being the last born of creation, was made as the finest, noblest and most exalted. She is not represented as being made from the dust of the ground, as was Adam, but as being builded out of refined material which the Creator took from the body of her husband. The garden of Eden was not ready for Adam at his creation, and the Creator, it would appear, through attachment to the noblest creature of his hands, did not form Eve till a paradise was made ready for her reception. Man was made to have authority to look at

the stars, and contemplate upon the coarser works of nature ; while woman was intended to admire the beauties of the more humble yet equally important and more refined works of the Deity, as exhibited in the lily and the rose. Man was placed in Eden "to dress and to keep it," but woman was intended to enjoy and admire. And it is astonishing how this very feature still looms in her nature. Should we chance to meet with the little brother and sister, on a fine evening in summer, returning from school, the boy would be seen throwing stones at the affrighted birds, and clambering up the trees to plunder their nests, while his little sister may be seen stooped down, so as to be almost unobserved by the passing traveller, picking and admiring the beautiful flowers. One is noisily indulging in cruelty, while the other is silently reading the tiny characters of perfection. Indeed if we are to judge from her real natural inclinations, the very essence of her heart is heaven. That God had respect for the woman, and felt a degree of sympathy towards her, which he did not manifest towards the serpent or Adam at the time of the Fall, is apparent from the address to each of them by the Almighty. Mark the sharpness of his language towards the serpent and Adam ; and the calm, smooth expression in addressing the woman. Unto the serpent he said : " Because thou hast done this, thou art cursed above all cattle," &c., and to the man, " cursed is the ground for thy sake." No curse, however, was pronounced upon the woman ; God only multiplied her sorrows, and caused her to be in subjection to her husband ; and even the fact that one of her " seed" should be bruised, was not addressed to her, but to the serpent. It is likely that God said more to each of them than was recorded ; and we would infer that He gave Eve much encouragement as to the great ransom in the future, for Adam immediately after gave her the name Eve.

God, viewing woman in her true light, and that too in the light here presented, could not in His eternal justice permit man, who was a wilful sinner, to have any part in the holy redemption. Indeed he was excluded from this favor in the very address after the Fall. It was not one of the "seed" of man, but of the woman, that should "bruise the serpent's head," and accordingly the angel informed Mary that she had "found favor with God" (Luke 1:30), and that though she had not known a man (Luke 1:34), she "was with child of the Holy Ghost" (Matt. 1:18), and should "bring forth a son," and "call his name Jesus, for he shall save his people from their sins." (Matt. 1:20, 21.) Woman was, therefore, and she alone, honored as an agent in introducing the Son of God into the world, that the world through him might be saved. Hence it is unto her sex, in the dispensation of Providence, that the honor of the restoration of man to his primeval state of happiness justly belongs.

The Saviour, while on earth, had the greatest respect for woman. Her peaceful society, lit up with a mild conversation and a cheerful smile, had a nearer relation to his native chambers than the noisy crowd of men with their usual bustle and confusion. Behold him as he embraces the goodly Mary and Martha; and with them weeps at the tomb of Lazarus! The female society, Jesus truly loved, and it is an omen for every true Christian to follow his example. And mark the absence of woman's accusation, when the Saviour is arrayed before the Roman tribunal. While the angry roar of the avenging populace is thundering through the court, not a female voice arises in the dizzy cry, "Away with him! Crucify him!" Not a Jewess was seen in the congregated throng of priests and rabble that insulted and scourged the Son of God, and subjected him to the ignominy of the cross.

The woman of Judea loved and believed in the Saviour, and followed him. She poured the precious ointment upon his head: anointed his feet with perfumed oil, and wiped them with her hair. The daughters of Jerusalem wept over him: the holy women accompanied him to Calvary, and in tears brought balm and spices, and sought him at the sepulchre. She was the first that Jesus addressed after his resurrection, no doubt as a token of his love and regard for her. As she was the last born of creation, so she was the first to greet the Saviour of mankind. Could the Redeemer, in his inexhaustible love, have omitted to pay respect to woman, who had placed her affections, her heart, her all upon him, when He was looked at by the world of mankind through a cloud of anger, who with greedy eyes desired his ruin?—she who had nurtured him in youth, directed him early in the paths of virtue, taught his infant lips to pray, and pointed him to that throne He had so lately quitted? And how the writhing hours, imbued with bitterest sorrow, infused the gall of lamentation into her heart when she beheld him led away as a lamb to the slaughter! Did she not shed a flood of tears over his footsteps as he emerged towards the cruel execution, and clambered the rugged height? And were they forgotten? Were her agonizing groans and throbbing sorrows hushed from his ears when the silent clay hung lifeless upon the tree, and the orb of day had hidden his golden hairs behind the apron of the skies? Nay, neither the exerted powers of men nor devils had blotted them from the scroll of his memory. Every act of sympathy and love was not forgotten in the silence of death, nor on the morning of his resurrection. And if our great high priest had respect for woman, is it not wrong that she should be enslaved by a dominant husband, or shut up in nunneries secluded from social society to be forever

denied intercourse with the world? Wrong! Hell itself would say, it is wrong! Take away woman from civil society, and you take away the lily from the vale, and the sun from the firmament! The heart of man without the smiles of woman would be like the lunar sphere without the solar, the seat of violence, rudeness and ruin, and would, in a short time, like that planet, become invisible. Never did the stars of liberty shine till woman was given her proper seat in the world—enslave her and you unsheath the swords of avenging foes. The pen of inspiration tells us that “the woman is the glory of the man” (I Cor. 11:7), and that “a virtuous woman is a crown to her husband” (Prov. 12:4).

Among the ancient Greeks and Romans, women seem to have been considered merely as objects of sensuality and domestic convenience, and were commonly devoted to seclusion and obscurity: it was not until northern nations had settled themselves in the provinces of the Roman empire, that the female character assumed new consequence. They brought with them the respectful gallantry of the North, and a complaisance towards females which inspired generous sentiments, hitherto little known to the polished nations of antiquity, which ultimately led to the institution of chivalry. “England is called the paradise of women; Spain their purgatory, and Turkey their hell.” Just in proportion as women are respected in a nation, does that nation improve and become enlightened. If you want to find ignorance, superstition, little minds, cold hearts, debauchery and crime, go to the countries that enslave their women; go to the heathen nations whose very religion debases her:—to India, for instance, where she is burned on the funeral pile of her husband, and forced to cast her infant children in some instances into the River Ganges. On the other hand, if you want to see bright coun-



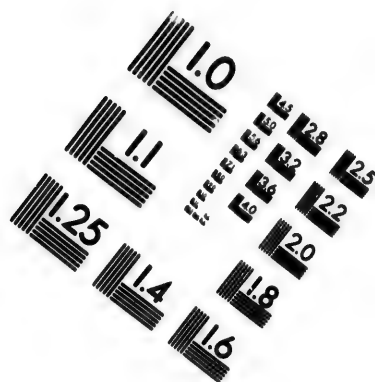
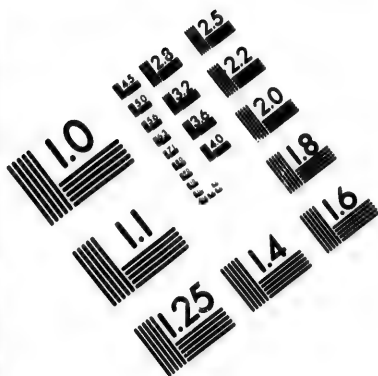
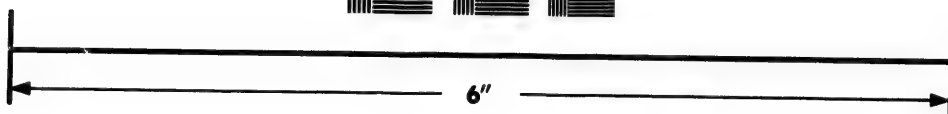
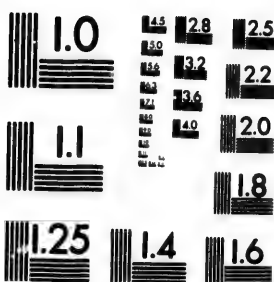


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tenances, warm affections, civil society, respectable associations, where public assemblies are lit up with the smiles of woman, and all the other graces that adorn society, come to Canada, or the United States, or to England, where there is a reverence for the fairer sex, where woman is drawing near the seat that was lost in Paradise.

The love of woman has in all ages been remarkable, and even proverbial for its intensity, purity and endurance. "Thy love to me," says, David of Jonathan, "was wonderful, passing the love of women." It is as enduring as the hills, and lasting as the thread of life. The wide wide years cannot divide it, neither can long absence in death suspend it. Its halo which surrounds her heart when standing at the side of her dying child remains unsullied, by the dazzle of opulence or the gay songs of after years. The brightness of terrestrial glory can not eclipse it, and the terrors of death cast no shade upon it.

"If there be one thing pure,
Where all beside is sullied,
That can endure
When all else pass away,—
If there be aught
Surpassing human deed, or word or thought,
It is a mother's love."

CHAPTER X.

MARRIAGE.

MEN in ancient times embraced the opportunity of entering into the conjugal state at a much earlier age than in the present day. The Jews esteemed marriage a matter of strict obligation, and embraced it very early in obedience to the Divine command (Gen. 1:28). The men generally married at the age of eighteen, and the women at twelve. The Hindoos also marry their daughters very early, seldom later than twelve, and even consider it a disgrace if they are not espoused before that age. But in Christian countries there is no general rule or prevailing custom. Many do not marry at all, which would have been a disgrace to a Jew, and his relatives. Many remain single till they reach the age of thirty, and we occasionally meet a lady that is sometimes a *little older*. It is remarkable that all great men married when young; and the following distinguished persons were unhappy in that state: among the ancients, Aristotle, Socrates, Pittacus, Periander, Euripides, and Aristophanes: among the moderns, Boccaccio, Dante, Milton, Steele, Addison, Dryden, Molière, Racine, Sterne, Garrick, and Lord Bacon. It might not be out of place to remark that from the days of Aristotle it has been observed that illegitimacy is generally an ally of genius and valor. In almost every nation the most eminent families have sprung from the illegitimate offspring of princes. Hercules, Romulus, Alexander, Themistocles, Jugurtha, King Arthur, William the First, Homer,

Demosthenes, were all base-born. The same might be said of the bravest generals, and best scholars of English annals. Among the first sins in which mankind plunged themselves after the fall was polygamy, and was admitted and practised by most of the early nations of the world. It was first introduced by Lamech (Gen. 4:19), and has continued to the present day. It was very common among the ancient Jews. The most of the patriarchs had several wives. Solomon had no less than three hundred, and seven hundred concubines. In ancient Media it was considered a disgrace for a man to have less than seven wives. We read of some distinguished persons among the ancients and moderns that must have had a great number, as we judge from the number of their children. Ahab, king of Israel, for example, had seventy sons, (II Kings 10:1) in Samaria. Priam, king of Troy, is represented in Homer's Iliad as having fifty sons and twelve daughters; Artaxerxes, the successor of Darius Nothus, king of Persia, had, by his three hundred and sixty concubines, and his queens, no less than one hundred and eighteen sons. Stewart tells us that in 1720, Muley Abdallah, emperor of Morocco, is said to have had seven hundred sons able to mount horse. Polygamy is at the present day still practised in the Eastern countries—in Asia and Africa. The great objection the kings of South Africa have to receiving the gospel is, that it grants them only one wife, and deprives them of several others. It is not at all uncommon for a Turk or Persian to have a dozen wives. Among the Romans, Mark Anthony was the first that took two wives, but the practice becoming frequent, it was forbidden by Arcadius, A.D. 393. In some cases, where polygamy was forbidden by the state, a husband was permitted to take two wives, as in some instances in Sparta and Syracuse. The most remark-

able case of this kind, is that of Count Gleichen, a German nobleman, who was permitted by Gregory IX. (A.D. 1237) to marry two wives. The emperor Charles the Fifth, however, punished this offence with death, but it is now forbidden in all British dominions under the penalty of transportation.

Polygamy is one of the greatest evils now reigning in the unenlightened nations of the earth. Some persons, however, even in decent countries, have advocated its non-immorality, affirming that in the words, "they shall be one flesh," there is no restriction to one wife or even to two, contending therefore from Scripture, that a man may have as many wives as he chooses. But the words "they shall be one flesh," it happens, is quoted by Christ and the apostles in such terms as to admit of only two persons. "They *twain* shall be one flesh" (Matt. 19 : 5). In fact the Vulgate Latin, the Septuagint, the Syriac, the Arabic, and the Samaritan, (Clarke) all read the word *two*. But what consequence, for the matter has been settled by the Saviour himself.

The first institution of marriage is set forth, in the history of woman's creation, as an example till the end of time. God did not make Adam a dozen women, but only one. And wherefore one? says the prophet. That he might seek a *godly seed*—a holy posterity. (Mal. 2:15). It seems quite plain that Adam must have been at least three or four years older than Eve; at all events, he was created before her; and hence the husband should be older than the wife.

It appears that there was nothing ceremonial at the marriage of the first human pair, only perhaps the *leading* of the woman to the delighted Adam or his abode, probably in the same way as Isaac led Rebekah to his mother's tent, as a testimony of their union; a custom which may have originated in the example of Paradise. A similar custom pre-

vails in many parts of the East at the present day. No such forms and ceremonies existed in very ancient times as are now so strictly observed. Marriage, with ceremonies of a binding and solemn nature, was first instituted by Cecrops the founder and king of Athens, B.C. 1556. The celebration of marriages in churches was ordained by Pope Innocent III. According to the law of God in creation, every man should marry a wife, but this like every other enactment of the Deity has been violated and overlooked, and that too in our own enlightened land. In some heathen countries there is some difficult duty to perform before a man *can* marry; and even in Christendom the papal authorities have excluded the priests from the enjoyment of the marriage state; this was forbidden as late as the eleventh century, and the vow of celibacy was taken in A. D. 1073. Among some of the petty principalities of the East, no young man is permitted to marry till he produces the head of an enemy. In all these savage and barbarous nations, woman is considered only a step above the brute, and is still the subject of cruelty, abuse, and slavery. The finest specimen of terrestrial honor, lewdless created! daughter of heaven! has been turned into a sinful and defiled body, by wretched, godless man. And shall we look only to heathen wretchedness to find such barbarous villainy? Nay, were secret things revealed to our eyes as to the Divine, Christendom itself would exhibit debaucheries equally degrading and horrible. Possible it is, and, alas! too probable, that a certain class of ecclesiastics have made the vessel of honor such a wreck of extreme pollution, that was not Satan himself on the wings of woe he would turn away horrified and disgusted. O ye lewd, deceiving, heart-distressing, love-destroying, God-forsaken, Christ-rejecting crew! how shall ye escape the damnation of Hell?

The pen of inspiration has condescended no description of the persons of our first parents, whether they were beautiful, as Milton describes, or otherwise. There is but one passage that I have as yet observed in the Scriptures that would appear to hint the faintest description of the heads of our race, *i.e.* Cant. 5 : 11, where Solomon describes his "beloved" as having "curled" hair, "black as a raven." I am much inclined to think that this omen of beauty has been transmitted through tradition from Adam to the days of the wise king, an idea that has the highest degree of probability in its favor, and therefore it might not be deemed extravagant to conclude that this is a description of Adam and Eve. This was also the taste of the ancient Romans. It is generally thought that this chapter contains a description of the person of the Messiah, but if we are to believe Publius Lentilus, his hair was not black but of a sandy cast, or rather of "those beautiful shades which no united colors can match." He further tells us that his hair was curly, as in the text, but only so upon his shoulders, and parted on the crown of his head. The Saviour was in his person of remarkable beauty, tall and elegantly shaped, and his aspect amiable and reverend. Adam and Eve were in all probability of a figure resembling the second Adam. As our first parents needed no clothing, it is probable that if human eyes had viewed them in Eden, they would have appeared rather swarthy in their complexion, the climate being of course sufficiently warm to in no way militate against their happiness. The word *Paradise*, however, means *a forest of trees*, and hence their original complexion, which was no doubt very fair, may have been preserved by being continually beneath the shady bower; and it is certain that man has a less disposition to be exposed to the solar rays than any other animal, when the

heat is as intense as it must have been in Eden. Nearly all animals of the lower orders like to bask in the sun, and the mole will keep its back toward the sun even when under ground. We might judge that if Eve had black hair, that she was dark complected; still this is not always the case, though it is a general rule. We have some reason to think that her eyes were blue, and it is remarkable that nearly all great men have had blue eyes.

It is generally thought that Adam was, as is believed of all the antediluvians, a person of a constitution as strong in proportion as the length of his life in contrast with ours, living to the great age of 930 years, while we seldom attain to three-score and ten. But let it be remarked that though the Pentateuch was indited by inspiration's pen, yet we are not to suppose that those early years were intended to correspond with ours, or that the antediluvian years were as lengthy as they are now reckoned. Indeed we have not the slightest grounds on which to base such a conclusion. The year as we now have it was not arranged till a short time before the Christian era; and had the year among the ancient Romans been but half its present length, we would still call it a year, or if it was now changed and made either longer or shorter it would yet be denominated a year. But how could unaided man, unaided by astronomical knowledge, give the exact limit of the year, providing there were no variety of seasons by which to reckon? Would he not have some method of his own to tell how old he was, and might not his periods be vastly shorter, periods that he might observe from the blossoming, for instance, of certain trees—than those by which we now calculate? Well, there could have been no chronology marked by the changes in the face of nature when Adam lived, inasmuch as there was then no variety of seasons, as

we now have them. Our first parents could have known but one season, and that continued summer, for they were naked; and besides, as they did not eat flesh but only fruit, their provision must ever have been upon the trees. It is true that God said to Noah after he came out of the ark, that "while the earth remaineth, seed-time and harvest, and cold and heat, and summer and winter, and day and night shall not cease," still we have here no evidence that these seasons existed before the deluge; on the contrary, if we are to follow the original, they only just then began to be. This opinion is followed by some judicious commentators, as, for instance, the celebrated Dr. Adam Clarke. It seems plain, therefore, that there was but one season before the time of the deluge, and hence the earth stood, when Adam was in Eden, with her axis at right angles to the plane of her orbit. I am aware, however, that this idea has been hooted at, still I feel sufficiently confident upon the point to challenge any person now living to show the contrary, and at the same time account for the above-mentioned phenomenon. There is also a question that the opponent will require to answer before his triumph, and that is—why did God use such language to Noah? The Creator would never have thus addressed the worthy old patriarch had there not been a reason. Josephus, the Jewish historian, in his usual blind style of assertion, of which the sagacious Colenso takes advantage in his peculiar strain of argument, says, that Noah "was afraid lest he (God) should drown the earth every year." This is truly one of the many ignorant assertions (*yet we do not condemn* his judgment in his own language) of this Jewish writer. If we are to believe the Bible we are also to believe that Noah knew the object God had in view, in destroying mankind and in preserving him, which was to repopulate the depop-

ulated earth, and if Noah knew this he would hardly fear that God would visit the earth *annually* with a flood ; nor could we expect to find, as we do the apostle Paul, mentioning him among those who were of the household of faith. And did we acknowledge Josephus to be correct, does his pen give any reason why God would say to Noah, and promise, that day and night *should not cease* ? If the flood only drowned mankind, and swept animal life from the earth, would any number of them awake a fear in his breast that day and night would not continue ? Would not any sensible person reply in the negative ? Well then, what gave Noah this fear,—a fear that was at the point of wavering his faith before he consulted the Almighty throne, and which prompted him to make application thereto ? It was this : Noah had always observed from his youth that the sun rose in the east, and passed over his head, as it does now, to the inhabitants of the tropical countries ; but now he observed to his great astonishment that the orb of day was retreating towards the southern horizon, and therefore, if it continued, alternate day and night would for ever cease ; God therefore gave him the promise in the text.

But allowing that there was continued summer before the deluge, how did Adam know his age ? This may seem a difficult question to answer. He might have reckoned by the *new moon*, which the Hebrews were so particular in observing : in fact I know of nothing that would attract the attention of Adam more than the lunar changes ; and if he had thus reckoned, allowing three changes for a year or period, he lived to the age of above threescore and ten, the allotted period of man's life. It appears to me a gross inconsistency that the period from "the fall" to the deluge, was, as Archbishop Usher calculates, upwards of fifteen hundred

years, for we have the genealogy from Adam to Noah, which includes but comparatively a few persons, not a dozen, and most of these are represented as having been a hundred years old before the birth of their children mentioned in the text. But how are we to reconcile this with the divine command to Adam, "Be fruitful and multiply, and replenish the earth," Genesis 1: 28? Would any persons assert that the antediluvians were less "fruitful" than the human family now; then how is it that none mentioned in the catalogue were born till the parent had arrived to such a great age? It might be said that the genealogy was reckoned with the sons that were among the youngest of the children of each patriarch, for they all, except Noah, had "sons and daughters" besides the particular person mentioned, still it does not appear how it happens that none of those named were born till the parent was above threescore at least; and it appears from the text that Noah was the eldest son of Lamech, and he was not born till Lamech was 182 years old. But it seems plain that the most of these were the first-born, not only because they were then considered the superior, but also from the fact that the sentence "and he begat sons and daughters" is appended in such a way as to indicate that the "sons and daughters" they begat were all younger than the person mentioned. The only place in which this sentence will admit that *some* of the *sons* and *daughters* may have been older than the one reckoned in the genealogy, is in the place at Adam's decease (Gen. 5: 4), and accordingly we find that Cain and Abel were both older than Seth. This son of Adam is honored among the number in the sacred line instead of Cain, who was a murderer, and was driven away in his wickedness. Adam was 130 years old when Seth was born; and if

Abraham had known this, which he must, and the years in his day were as those in the antediluvian times, does it not appear strange that "the father of the faithful" "fell upon his face and laughed, and said in his heart, shall a child be born unto him that is an hundred years old? and shall Sarah, that is ninety years old, bear?" (Gen. 17:17.) Now it does appear that Adam was nearly a hundred years old when Cain was born, for he and Abel were, as the Jewish doctors and modern critics advocate, twins; and, if so, it seems plain that as Seth was born a short time after the death of Abel, that the first man was a century old before the birth of his first child. Now this is quite unreasonable, when we come to view the Divine command, Gen. 1:28; and it is well known that the Jews considered this a command to marry at an age not exceeding twenty years. I, therefore, conclude that the antediluvian years were vastly shorter than now; and, hence, that those ancient patriarchs were not so old as we infer from the reading of the Scriptures. It may also be remarked that Noah was an aged man to build an ark when he was of the age of nearly six hundred years. The sacred number *three*, "having a beginning, a middle, and an end," in all probability had its origin in Adam, mayhap as a memorial that God visited him three times—at his creation, at the creation of the woman, and at the fall when he was expelled from paradise. Might he not have employed this number in the computation of time that it might be preserved in being employed in the future ages of the world; and in what would he be more likely to employ it than in the observation of the new or full moon. Now if he calculated his age by three new or full moons, he would have made his years to contain but three lunar months, and this is the only view that will give the text its full tone of

correspondence and unity. Adam then lived to the age of 214 of our years, and Seth was born when he was about thirty. It might, however, be urged as an objection, that as Cain and Abel were full-grown men, Adam could have been but about seven years of age when they were born, which would appear as an absurdity. Indeed, so true is this, that we are supplied with sufficient proof that Abel had a family before his death, or whom had Cain to fear in the future who should slay him? The blood or rather *bloods*, (as in the margin,) were doubtless Abel's children that are spoken of as crying from the ground. But let it be remarked that this after all is no objection, for had Adam and Eve been incapable of multiplying, the Creator would hardly have said to them, "Be fruitful and multiply," &c., immediately after the creation of the woman. Now of all the antediluvian patriarchs, Mahalaleel and Enoch had children at the earliest age, and they were, according to their years, sixty-five, and according to ours fifteen. This may appear unreasonable to some, but we are willing to admit any more reasonable interpretation. The ages of these, however, are given as 165 instead of sixty-five, in the Septuagint. This method of reckoning time continued after the flood till the times of Abraham, who, in all probability, obtained the natural system from the Canaanites or the Egyptians. But how will this theory deal with the post-diluvian genealogy, for some of these patriarchs were not more than thirty years old at the birth of their sons? It is answered that the age of these patriarchs at the birth of their sons is, in the greatest probability, wrong in the Hebrew text, for in the Samaritan, the Septuagint, and in Josephus, they are nearly all of them recorded as a hundred years older than in our English Bible. If the reader maintains that the numbers in the Hebrew are true, it is expected that

a reason be given for the mystery, how it happens that the antediluvian patriarchs had no sons till they were as much as a hundred years older than were the postdiluvian. All late writers agree in following the Samaritan or Septuagint. The idea, therefore, that Shem and Melchizedek existed synchronically is unfounded. On the above system of calculation several of the antediluvian patriarchs, and some of the postdiluvian, attained to a greater age than any perhaps in modern times. The oldest moderns of which we have any authentic account did not live to an age above 190—an age which the antediluvians probably, *in general*, did not exceed. Gilmour McCrain, of the Isle of Jura, one of the Hebrides, is said to have kept 180 Christmases in his own house. He died in the reign of Charles I. Thomas Parr, a laboring man, of Shropshire, died aged 153. Henry Jenkins, of Yorkshire, died aged 169; and Louisa Truxo, a negress of South America, lived to nearly 180. We read of a man in Dantzic that died in his 185th year, and of another in Wallachia upwards of 186. When James I., king of England, first visited Herefordshire, a dance was performed in his presence by five men and five women, the sum of whose ages exceeded a thousand years.

I am, however, aware that to Christians in general the above idea will, in all probability, be rejected as fanciful and spurious; but to the man that is well versed in theology, and is acquainted, from historical sources, with the various circumstances in which the Scriptures were written, and the contrariety that exists in the different MSS. with regard to numbers, together with the exposure to which they were subject, both as regards the scribe and the transcriber, I am confident the opinion will appear at all events plausible; but to take the pen with the intention to please the main body of

Christians, particularly those who have never read a comment, but only the plain letter of the Bible, we would require to set one passage of Scripture to clash with another, inasmuch as they are ever ready to reject the true interpretation if given in any other way than in our English version. But let me here remark that to those who are thus bigoted, the writings of the late Colenso are, in some points at least, insurmountable; still I am confidently of the opinion that if the real true interpretation be brought forward, and which is in general well supplied in the margin, by the translators, his foundation will prematurely be shaken. If a person of the above class were, for instance, asked if he believed that wood after it was hewn could exist above the ground without suffering decay for a period of 120 years, he would doubtless answer in the negative that it could not, and yet it is the prevailing opinion that the ark was 120 years in building. But the fact is, the ark was built in a much shorter time than is generally supposed, as will be shown in the chapter upon the deluge; and what appears to me the real truth is, that it was not more than seven years from the time Noah was warned of the flood till it was upon the earth.

I have said that the years during the antediluvian and postdiluvian ages till the days of Abraham were much shorter than now, and that Abram, after he left his native country, reckoned his years as did the people among whom he lived. This, I think, will appear too plain to be denied from the following:—In Genesis 11:26, we read that Terah lived seventy years, and begat Abram, Nahor, and Haran. Now which of these was born when Terah was seventy? We would infer from the reading that it was Abram, but it is doubtful that this was the case, for, as Abram was the superior, and one of the most remarkable men of ancient times, his name would

be mentioned first by way of dignity, even was he the younger, in the same way as Shem, who was the youngest, as we learn from the Scriptures and Josephus, is mentioned before his elder brothers Japheth the eldest, and Ham. The same may be said of Jacob and Esau, and of Manasseh and Ephraim. But Abram was at all events not the eldest, for Haran was married and had a son before the marriage of either Abram or Nahor. Indeed, Abram and Nahor married the daughters of their brother Haran. It is quite certain, therefore, that Abram was, as Dr. Adam Clarke contends, the youngest. Terah, his father, therefore, must have been at least eighty years old at the birth of Abram. Hence, as Abram was seventy-five when he left Haran (12:4), Terah must have been at all events 155 when he died; and, therefore, Kennicott, Geddes, and others, who follow the Samaritan, that he died aged 145, are in error. Then we are obliged to receive the account, as in our translation, that he died at the age of 205. But Terah was not 100 years old when Abram was born, as we learn from Gen. 17:17; and, therefore, Abram must have been at least 105 when he left Haran. But how is this to be reconciled with Gen. 12:4, when we find that he was then only 75? And, besides, it appears that Abram dwelt in Haran several years after his father's death. We see here that the years of Terah's life must have been reckoned according to the old primeval method, while Abraham reckoned, after he left his native country, according to the custom among the people where he dwelt; and it must also be borne in mind that Abram lived only to the age of 175, which was younger than any of his direct ancestors, and yet it is said that he "died in a good old age, an old man, and full of years," Gen. 25:8. And mark the strange language in giving his age, *And these are the days of*

the years of Abraham's life, which strongly indicates that his years were reckoned by days, which would not have been mentioned had not the years been previously recorded, not by days, but by months, or according to some other method.

The question with regard to the site of Eden has greatly excited theologians. It has been sought in almost every part of the globe, between the polar circles—nay, at the poles themselves. Some argue that it was in Asia, some in Africa, others in America; but those who place it in the new world will require to prove that the western continents were deluged, or at least North America, which as yet has not been shown, and indeed never can be. And Eden could not have been in either Africa or Europe, as the deluge was doubtless caused by a rush of waters from the southern ocean, in which case the ark must have floated northwards, as Bishop Horne decides from the Scriptures. The Bible, in speaking of Eden, refers to no continent whatever. The Hebrews were strangers to the division of the earth's surface into continents, and hence the word Asia is found in no Hebrew book: it occurs only in the Maccabees, and in the New Testament. I have met with some who believe that the garden of Eden is still in existence in some secluded part of the earth, that human eyes have not since the days of Noah been permitted to scan, and that the "cherubim" "and" "flaming sword" still protect the tree of life. One in particular, a man of no ordinary talent, has given me this as his opinion, and certainly furnishes some arguments in its defence. The garden may indeed have been thus guarded even to as late a period as the times of the flood, for we judge that it was thus visibly protected in the days of Cain from his going out "from the presence of the Lord," which was no doubt the "cherubim;" but it is likely that the rush of the Noachian

waters covered it with a bed of detritus, under which it is probably now lying. For aught we know, this may have been a secondary object the Creator had in view in destroying the earth with a flood (a destruction he might have effected in some other way), that the tree of life might be ever after concealed. There is no spot in the Asiatic continent that can be looked upon with certainty as the site of ancient Eden. The Creator has no doubt concealed it that it might not give place to idolatrous worship, which it would have a tendency in the reign of superstition to inspire. Several authorities, says Calmet, concur in placing it in a peninsula formed by the main river of Eden, on the east side of it, below the confluence of the lesser rivers which emptied themselves into it about 27° N. lat., now swallowed up by the Persian Gulf, an event which may have happened at the universal deluge. Some have thought that the terrestrial paradise was not terrestrial, but that it was in the moon. The Mussulmans say that it was in one of the seven heavens, and that from this heaven Adam was thrown down into the island of Ceylon, where he died after having made a pilgrimage into Arabia, where he visited the place appointed for building the temple at Mecca. They say also that this delicious garden had eight doors, whereas hell has only seven, and the porters who have the care of them are to let none enter before the learned. The most probable account of its situation, says Dr. Adam Clarke, is that given by Hadrian Reland. He supposes it to have been in Armenia, near the sources of the great rivers Euphrates, Tigris, Phasis, and Araxes. He thinks Pison was the Phasis, a river of Colchis, emptying itself into the Euxine Sea, where there is a city called *Chabala*. This country was famous for gold, whence the fable of the *Golden Fleece*, attempted to be carried away from that country by the heroes of

Greece. The Gihon he thinks to be the Araxes, which runs into the Caspian Sea, both the words having the same signification, viz., a *rapid motion*. The *Hiddekel* all agree to be the Tigris, and the other river, Phrat, to be the Euphrates. All these rivers rise in the same tract of mountainous country, though they do not arise from the same head. Josephus says, that "the garden was watered by one river which ran round about the whole earth, and was parted into four parts;" but the rivers which he points out appear to me to be entirely outside the teaching of the Bible. The probability, however, is, that the terrestrial paradise was at all events as far north as the tropic of Cancer, and may have flourished in the region to which Reland refers.

We are not informed how long Adam and Eve lived in paradise; some think they continued obedient many years; others but a few days; others again not many hours. It is plain however, that they were there not many months, or the divine command in Gen. 1:28, would have been fulfilled, whereas Cain was not born till after their expulsion. Many have been the opinions with regard to the salvation of Adam. Tatian and Enderates (says Taylor) were positive he was damned, but this opinion the church condemned. The book of Wisdom says (chap. 11) that God delivered him from sin, and the Fathers and Rabbins believe that he did hard penance. It is not known where our first parents were interred. Some of the ancients believed it was at Hebron, an opinion which they founded on Josh. 14:15. The Orientals say that when Adam was driven out of Paradise, he was sent to the mountain of Rahoun in the island of Ceylon, two or three days' journey from the sea. The Portuguese call this mountain Pico de Adamo, *i. e.*, the mountain of Adam, from the belief that he was buried under it, after having lived in repent-

ance a hundred and thirty years. A number of celebrated writers, among whom might be mentioned Origen, Epiphanius, Jerome, and Bede, maintain from an old tradition that Adam was buried on Calvary, and that the foot of the cross of Christ rested exactly upon his skull, or upon the portion of earth which had replaced it. There is a chapel on Mount Calvary dedicated to Adam.

The first recorded exercise of Adam's intelligence was his giving names to the lower animals. It is here, says Bishop Warterburn, that we are to look for the origin of language. It is probable that Adam and Eve were created, as they were to receive the commands of God, with the ability of speech; and it seems plain, as Dr. Clarke concludes, that this language was the Hebrew. We are not, however, to suppose that God communicated to Adam the very terms he should use, but only the ability of creating words to represent his ideas, for God brought the animals before him, to see *what he would call them*. The Jewish Rabbins say that God created letters on the evening of the first Sabbath. Many think that the two tables of stone contained the first representation of articulate sounds; but Josephus affirms that he had seen inscriptions by Seth the son of Adam. When God caused the animals to pass before Adam it is likely the whole train of species exhibited some peculiar distinction to his mind, by which he formed the name of each animal of its kind. The birds were probably chirping, whistling, cawing, &c., and therefore their names would be derived from their sounds; others perhaps from their actions. Every noun in Adam's language would therefore be derived from some verb, and it is well known that this is particularly the case with the Hebrew language. The Hebrew is full of descriptive words, and the names of birds are in particular

remarkable. The Hebrew *kra*, the name of the partridge (mentioned only twice in the Bible, in I Sam. 26: 20, Jer. 17: 11), was evidently taken from its note: its name in Arabic is *Kurr*, and one writer says that in Andalusia in Spain its name is *churr*. Indeed, it seems natural in our day to name the birds from their notes. We speak of the chipping bird, the chick-a-dee, the cuckoo, and the whip-poor-will, names that the untaught child would create. The word *cuckoo*, says Chambers, so exactly descriptive of the note of this bird, ramifies through several languages. It is spelt *coucou* in French, and *cuculo* in Italian. It is surely nothing incredible that Adam should have invented his own language, no more so than the fact that did the people after the confusion of tongues at Babel; and we find probably traces of this at the present day. It is well known, says Chambers, that many people find it difficult to pronounce certain consonants. A foreigner has great difficulty in articulating the English *th* in such words as *thine*, *thee*, and *that*. The English, on the other hand, seldom succeed in giving the right pronunciation to the guttural sound *ch*, which is of such frequent occurrence in the German language, and which is daily pronounced by the natives of Scotland in such words, as *loch*, *light*, and many others. Many persons are said to *lisp* because they cannot pronounce the sound *sh*. The Ephraimites forfeited their lives from their incapacity of pronouncing this sound. If the Greeks had been at the fords of Jordan, they would likewise have found themselves in a similar predicament, for the syllable *sh* does not occur in the Greek language. The word *shibboleth* means an ear of corn, and in the Septuagint it is rendered by the word *σταχυς* (*stachus*), which in Greek has the same signification as the Hebrew *shibboleth*; but no Greek word could be found to express the sound *sh*; there-

fore in the Septuagint the narrative is imperfect. The natives of Otaheite could not be taught to say Captain Cook. They always called him Taptain Toot. The letter *c* does not occur in their alphabet. The great majority of Jews and Christians, and the greatest philosophers of France and England, however, maintain that language was originally revealed from heaven ; but an opposite opinion was held by Cicero and Horace, and most of the Roman and Greek authors. That the Hebrew was the language of Adam, there is little reason to doubt, and was continued in the family of Shem after the confusion of tongues ; but it has been the opinion of the greatest linguists of modern times that the Hebrew, the Chaldee, and the Arabic, are but dialects of the original. Psammeticus the Powerful, king of Egypt, B. C. 612, desiring to know the most ancient language, confined two children, and fed them with pure milk, ordering the shepherd to whose care they were entrusted never to speak in their hearing. Indeed it is said that his tongue was cut out by order of the king that there might be no mistake. When the children were two years old they were heard to repeat the word *beccos*, which, after being made known to the king, was found to be a Phœnician word signifying *bread*. From this, Psammeticus concluded that the language of Phœnicia was the most ancient in the world. Adam has been the reputed author of several books. The Arabs inform us that he received twenty books which fell from heaven. The Jews say that he is the author of the ninety-first Psalm, and that he composed it almost immediately after his creation. Some have believed that Adam invented the Hebrew letters. The ancients, who were unacquainted with the true history of the world, affirm that under the happy reign of Saturn all animals were capable of conversing with man, that they all spake the same language.

Josephus believed this himself, and the idea has still its advocates. It is however very probable that this notion arose from the story of the serpent conversing with Eve, which Milton believed talked through the power of the Evil One.

In at his mouth
The devil enter'd ; and his brutal sense
In heart or head, possessing, soon inspired
With act intelligential.

And the great epic poet represents Eve, when she heard the wily snake's address, as saying to the serpent :

What may this mean ? language of man pronounced
By tongue of brute, and human sense expressed ?
The first at least, of these I thought denied
To beasts ; whom God, on their creation-day,
Created mute to all articulate sound.

Dr. Adam Clarke thinks that the tempter was not a serpent, but the *ourang-outang*, which seems very plausible, from his notes on Genesis. Mr. Whiston was of the opinion, that " few of the more perfect kinds of those animals (serpents) want the organs of speech at this day." But the idea is certainly unsupported by any practical evidence. As far as we know, in the present day of original language, we may safely conclude that man was alone of all terrestrial animals endued with the ability of forming and using language ; still it appears quite singular, that we read that God blessed the animals he created on the fifth day, and said to them, " Be fruitful and multiply, and fill the waters in the seas, and let fowl multiply in the earth." But nothing of this kind was said to the land animals, which appears to be another query. Indeed this passage might appear to afford some little argument, that the lower orders *were* capable of conversation, and that God deprived them of this accomplishment at the time of the fall ; for after the flood, God blessed Noah, and said, " Be fruitful

and multiply," whereas we find no address to the inferior animals. But it is quite an error for us to suppose, that because one animal spoke, all others were capable of speaking. We might, on perhaps as good grounds, argue that because Balaam's ass spoke, that every ass could do the same ; or, that because the animals where Adam dwelt were not carnivorous, that there were no carnivorous animals then in existence.

Christians in general believe that there was no such thing as death among the lower animals till the time of the fall, but the belief is totally groundless, and is unconfirmed by a single passage in the Scriptures. If we ask ourselves the question, for what purpose did the Creator place a tree of life in the garden of Eden ? it will at once appear that the humbler species were not thus favored. All the animals in the world did not have access to Eden—in fact, they could not get there ; and as we have already shown that this was the only tree of life in existence, it follows that the lower animals had no balm for their wounds, and no renewal of youth. The tree of life was placed in Eden as a reward for obedience, and as the brute creation were under no law of duty, it follows they had no tree of life. This tree, which was placed in the midst of the garden, no doubt that it might always be convenient to Adam, that he might partake of it, had the property of healing the body of injuries, and that too, no doubt, in a moment, and to continue life as long as he partook of it ; and Adam, had he been permitted to remain in Eden, would have still lived as young, fresh and fair, as when he first embraced the lovely Eve. But God, ever willing to do an act of mercy, drove him out, that he might avail himself of the promise of a Redeemer, repent and yet be able to live to God. Some very able men affirm that

Adam's death was caused by the poisonous nature of the fruit of the tree of knowledge, but the idea is preposterous. He died because he was mortal; and had, after his disobedience, nothing to support nature's decline. Nothing can live for ever but God, without partaking of the tree of life, and hence there are trees of life in heaven. Then as unsupported nature's fairest flowers die, it follows, that death had a universal dominion in every age of the world. Geology here steps up and says it is so, and *was* so, millions of years before there was an Adam or an Eve. "I need scarce say," says Mr. Miller, "that the palæontologist finds no trace in nature of that golden age of the world of which the poets delighted to sing, when all creatures lived together in unbroken peace, and war and bloodshed were unknown. Ever since animal life began upon our planet, there existed in all the departments of being, carnivorous classes who could not live but by the death of their neighbors, and who were armed, in consequence, for their destruction, like the butcher with his axe and knife, and the angler with his hook and spear." Were there no carnivorous tribes, there would, in course of time, be no tribes at all, for earth, air, and water would be gorged with animals, which would usher in an event more terrible than a universal deluge. The rabbit and the cat, if undisturbed in forty years, would multiply so greatly, that a whole county could not contain them, if there was only a pair of each to begin with. If Eve had been supplied with pets so much prized by some of our modern ladies, she would eventually have applied to Adam for a walk out of Paradise, and Cain would have had other employment of vengeance besides killing humble Abel. I am no way disposed to recognise the commonly received opinion that there were carnivorous animals in the garden of Eden, or even in Eden itself, not

because that they could not have been subject to Adam as well as to Noah, but because all the animals referred to in the Genesis, lived upon the "green herb." I am aware, however, that Milton, and a host of other eminent Hebrew scholars were of opinion, that death did not reign in any department of the animal kingdom, till after the fall ; still it is a certainty, that they were wrong ; and as I have already observed, the Bible itself is against them. The form and structure of the carnivora at once declare that they were never intended to subsist upon vegetable food. For instance, there is an adaptation of every animal constitution to its particular office. Grain-eating birds are provided with a gizzard to, as it were, masticate the hard kernels before they can afford any nourishment to the body. Flesh-eating birds, on the other hand, are destitute of this organ, as it is not required, as they live upon soft, fleshy substances, which are capable of immediately undergoing the digestive process. Creation, on every hand, tells the tale, that the fields of Nature are fields of warfare ; and all animals seemed designed either for defence or escape. The huge bulky animals are stoutly armed with defensive weapons which, when lacking in others, is made up in its fleetness. That this was the case in all ages, since animals first existed, is not only seen from geology, but in the present structure of the animals themselves. The horse, for example, being designed for swiftness, needs no gall-bladder, and accordingly, *we* find that it has none : this is the case with nearly, if not all swift animals. It is plain, therefore, that the garden of Eden was a particular spot where no strange animals could enter, and was probably enclosed in some way so as to be inaccessible. This seems taught by the words "and there he put the man whom he had formed" (Gen. 2.) ; where he, perhaps, could not have arrived without being taken by the power of the Almighty. Milton entertained the same

opinion, and describes Satan as leaping over the bounds which

As one continued brake, the undergrowth
Of shrubs and tangling bushes had perplexed
All path of man or beast that passed that way.

Adam was under the special care of his Maker, and though naked, was protected, satisfied, and happy—his soul at ease, his body healthy, his mind at peace. Man, in all ages, is striving to be as was Adam—all are looking for happiness—happiness that Adam lost. There is but one cord of love that remains unbroken—that which was woven in Paradise, and which united the primeval pair—the matrimonial, man and woman forsake home and friends to enjoy this union—we move on to eternity like the animals to Noah's ark—in pairs, and this seems in accordance with heaven's will, for there are about as many men in the world in general, as there are women. But the original innocence has fled, and we no longer breathe the atmosphere of peace, without apprehensions of troubles to come. On account of the exposure of sin, we are cold and unsheltered, and it will require more than fig-leaves to cover our nakedness.

It is recorded, permit me to add, that a sect of enthusiasts who styled themselves Adamites, arose in A.D. 130, that imitated the nakedness of our first parents before the fall. They assembled quite naked in their places of worship, asserting that if Adam had not sinned there would have been no marriages. They defied the elements, rejected prayer, and said it was not necessary to confess Christ (Eusebius). This sect was renewed at Antwerp, in the sixteenth century. Their view of revelation was something similar to that of the Zanzaleens [A.D. 535,] with regard to baptism. Zanzalee "taught that water baptism was of no efficacy, and that it was necessary to be baptised with fire by the application of a red hot iron. The sect was at one time very numerous."—*Ashe*.

CHAPTER XI.

THE NOACHIAN DELUGE.

IN all ages of the world, since Eden's sun beneath transgression's dark horizon set, permitting the gloom of disobedience to cloud the mind of the offender, since the expulsion of our first parents from the sacred bowers, and their first emergence upon the plains of error, we find, as in this primeval instance, that punishment has ever stalked in transgression's rear. With sole reference to this life this assertion has been strikingly verified, whether in the consideration of the character of individuals or that of nations. Personal crimes and national evils are alike subject to correction, and one is apparently as certain to follow as the other. Whether we trace the biography of distinguished characters or the history of empires, the measure of their afflictions is in most instances in proportion to the extent of their crimes. Not that we harbor for a moment that life's evils are in life always and sufficiently punished, but that the rod of correction follows, in general, not far behind the wilful and the offender. Our attention is not unfrequently arrested and our emotions aroused in reading of the oppression, misery and carnage of the dark ages. We look through the misty glass of ancient history, and we there view the most signal assurances of slaughter, cruelty and woe. Sodom and Gomorrah, Egypt, Assyria, Canaan and Tyre, Carthage, Greece and Rome, though long sunken in decay and ruin still live as indelible testimonies of bloodshed and cruelty. And what does all

this prove? Even had the ancient penman been silent upon the story of their native depravity—of their corrupted state through vice, debauchery and unfeeling crimes, would not destruction itself assure of previous unrelenting evil,—sins as closely connected with the stroke of justice as the cloud with the rain? The judgments of Heaven are all that exist; that they sometimes fall indirectly is no evidence that they come not from above. “No matter,” says Newton, “how long the chain of second causes may be, the first link is always in the hand of God.” And when justice has rallied its judgments and poured them down upon the unsheltered head of wilful man, it is only an assurance of the merits of previous, increasing evil, which, like the cuttle-fish, leaves its dye behind it as a warning to those who follow. It is truly alarming and lamentable how humanity has waned through the tyranny and oppressions of sin. It has pillaged many of our world’s principal treasures, and deprived us of many of her most precious and important gems: has robbed earth directly of thousands of her most noble and royal sons, stripped nations of their greatest warriors, important statesmen and illustrious heroes. Princes have sunken in its mire, thrones have crumbled through its oppression, and sceptres have fallen a sacrifice to its invasion; empires have groaned beneath its yoke, and governments have sunk beneath its sway. Not a trace of ancient temporal greatness meets the eye of the eastern traveller—no beauties as of yore welcome his gaze. As he wanders upon the oriental plains, where once stood the devoted cities—where once flourished the renowned splendor and meridian glory of antique ages, nothing is seen but loneliness, desolation and ruin. Prophecy has become its own interpreter. Tyre, according to the prophetic prediction, has become a rock for drying nets.

Nineveh, a desolation ; and Babylon, a desert. Egypt, the cradle of the arts and sciences, is now the basest of kingdoms, and the Jews are no longer reckoned among the nations of the earth. And what was the cause ? Was it merely the "sure destroyer time" ? or the failure of crops or commerce ? Nay, it was sin. This was the grand instrument that swept down the glory of long-ago periods. Can we not, therefore, imagine the enormity of the antediluvian world previous to the judgment of the waters of a deluge. All flesh had corrupted his way upon the earth, and only Noah found grace in the eyes of the Lord. Never, perhaps, since the world began was sin more universal in its dominions. There was not a solitary person on earth but Noah, not even his family, but was corrupt before God. Methuselah, though generally believed to have been a pious man, as was his father, was certainly not an exception, for *only* Noah was found righteous. Indeed, the spirit of prophecy seems to have given rise to his name, which signifies *death by water*. Josephus speaks of an ancient tradition, that the sons of Seth before the flood had learned from Adam that the earth would be destroyed first by water and afterwards by fire. The depravity of the antediluvians is easily seen from the Scriptures. "The sons of God," not angels, as some have affirmed, as especially the Rabbins and Christian fathers, but men ; and not pious men, as Dr. Clarke asserts, but ungodly, tyrannizing chiefs or judges in authority, who ruled the nations with a rod of iron—probably shed rivers of innocent blood, and took in every path of evil the lead in corrupting the world. It is plain they were not righteous, or why was Noah the only righteous man ? These "saw the daughters of men, that they were fair, and they took them wives of all they choose." Christ tells us, they were "eating and drinking,

marrying and giving in marriage." Doubtless polygamy is here intended, as before practised by the daring Lamech. Slavery also prevailed, probably in the most horrible form, as we learn it was known to Noah (Gen. 9: 25). It is probable, also, that idolatry held dominion over the minds of all, Noah only excepted; and likely human victims were offered as they were to Baal and to the sun* (Ps. 106: 38). Giants, or rather *fellers*, those who cut down the weak around him as the feller the trees, reigned as lawless tyrants, ravaging the country with impunity, delighting in the misery of those unable to protect or defend themselves. So great was the summit of iniquity to which mankind had attained, that God represents himself as repenting that he had made man, for every imagination of man's heart was evil and that continually. But what, says one, can God repent? Why if God repented that he had made man, he could not have foreknown that man would sink so deep into evil; besides, we read, that "he is in one mind, and what his soul desireth that he doeth," (Job 23: 13); also, that "God is not a man that he should lie, neither the son of man that he should repent," (Num. 23: 19); see also I Sam. 15: 29. Well, but God is a Spirit, and if he spoke of himself as he would to, for instance, His Son, we could, in all probability, not understand. God represents himself in the light of a human being, that we may comprehend his meaning. God "is not subject, in his infinitely exalted nature to be agitated by passions of joy or grief;" this language, therefore, can only be meant to express his infinite abhorrence of man's sin and his determination to put an end to his rebellion. "The change," says Patton, "is not in God's will, but in his dispensations; just as it is with regard to the heavenly bodies—our globe

* See Josephus, Dissert. II.

moves, and they *seem* to move round us." We read that when Noah offered up sacrifice after his leaving the ark, that "the Lord smelled a sweet savour," or rather, as in the margin, "a savour of rest." Here God is represented as *smelling*; but this is only intended to mean that God's wrath was allayed, for the Hebrews placed the seat of anger in the nose, in the same way as we place the seat of affection in the heart. Might he not, on equal veracity, be represented as repenting. The Scriptures, as I have said, are not literally true, and still they *are* true. They are intended to be read in faith, and if one writer represents God as repenting, and another states that he cannot repent, we are not to understand that one or the other is in error, but rather that they are viewing God in different lights. If an explosion took place in the centre of our planet, and projected lava through the crust on opposite sides, the inhabitants in either place would say it was projected upwards, though the directions were exactly opposite. He is represented as repenting in the same way as he is represented as remembering (Gen. 8:1, 19, 29).

Idolatry dates its origin as far back as the times of Seth. This we gather from the words, "Then began men to call upon the name of the Lord," (Gen. 4:26), or, as in the margin, "to call themselves by the name of the Lord," *i. e.*, they *began profanely* to call, &c., as by Dr. Adam Clarke and most of the Jewish doctors. These vilest of the vile were the posterity of Cain, who was; perhaps, himself at their head. Some ignorantly suppose that the negroes are the descendants of Cain, but it is worthy of remark, that Cain's descendants extended only to the times of the flood, when they were all destroyed. Seth's posterity alone continued after the deluge. Many, very many, however, of

Seth's progeny met the fate of the children of the evil Cain. Doubtless, they had by this time become numerous and joined with the idolatrous crowd in profaning the name of Jehovah. Even the sons of Noah would have perished had it not been for the piety of the old patriarch, their father, as we learn from Ezek. 14:14, 20. Josephus says, that the antediluvians had become so profane that Noah "was afraid they would kill him, together with his wife and children and those they had married," and that he departed out of that land. It appears that God appeared to Noah at least three times, once when he shortened the lives of the wicked antediluvians, once when he directed the building of the ark; and lastly, when the Lord shut him in at the flood. Probably he may have appeared to Noah when leaving the ark, as he appeared unto Abraham.

When God saw the exceeding sinfulness of men upon the earth, he said to Noah, "My spirit shall not always strive with man, yet his days shall be a hundred and twenty years." Nearly all writers upon this subject believe, that the time mentioned in this place denoted that the flood would be upon the earth at the end of that period, but the idea is erroneous; Noah was not 120 years in building the ark, nor yet a hundred years, and probably not ten of our years. That Noah was not such a long time in building is proved in Gen. 11:11, where it says, that Shem was an hundred years old and begat Arphaxad, two years after the flood. So the Samaritan and Septuagint (but Josephus has *twelve* years after the flood). Now Shem was the youngest of Noah's children, and he had a wife when God addressed Noah and directed him to build an ark, for God said, "and thou shalt come into the ark, thou and thy sons, and thy wife and thy sons' wives with thee" (Gen. 6:18). Shem,

therefore, if we are to follow the rule of the antediluvians as given in chapter 5, was at least sixty years old when he entered the ark, and, therefore, it was in building only thirty-eight of the antediluvian years, which was not longer than ten of ours. Considering the apparent fact that polygamy, at all events lewdness, in the extreme prevailed in the antediluvian ages, we may fairly conclude that the people were sufficiently numerous to everywhere terrify the man of piety. We cannot therefore agree with those who make such a small sum in the numbering of the antediluvians that there might not stand an obstacle in the way in arguing a partial deluge. Even the legitimate offspring must have amounted to several millions. All the antediluvian patriarchs without a single exception begat "sons and daughters," and no doubt many. We would infer that Eve begat many daughters immediately after the birth of Cain and Abel, or who were their wives. Indeed there is an old tradition that Adam had thirty-three sons, and twenty-three daughters. Here we see the fulfilment of the Divine command, "Be fruitful and multiply, and replenish the earth," Gen. 1:28. Mankind in the first ages of the world were certainly more fruitful, and increased more abundantly than at the present day. Indeed it seems plain that the climate before the flood was much more conducive to the enlargement of the animal creation than immediately after that event, besides the earth being then more fruitful and life greatly protracted, there was little or no disease, and the abundance for support prevented necessity taxing them with labor that would impair the constitution. It is remarkable also that the inhabitants of eastern countries multiply far in advance of the New World. We learn, for instance, from Aristotle, that the Egyptian women very frequently brought forth two, three or four children at a birth; and Mallet

informs us that they are still remarkable for fruitfulness. The Hebrews, when they entered Egypt, were in number but three-score and ten (Deut. 10:22), but in the space of a few years they became so numerous as to excite the fears of the Egyptian king. Now I see no reason why mankind in the first ages of the world, when they would be most likely to have an extreme multiplication, would not increase at least as fast as the Hebrews, especially when we consider the absence of disease where death was ushered in by the feebleness of age. So true is this that we read of not an instance of death before the flood till the person was 365 years of age (except by violence), and this was Enoch, who was translated on account of his piety: no others mentioned died under seven hundred and seventy-seven. Permit me to remark here that Dr. Clarke says that Noah is the oldest patriarch on record, Methuselah only excepted,* "when he lived to only 930 years, but Jared lived to 962, an age wanting only seven years to equal that of Methuselah, and thirty-two years *older* than Noah. We are not however to suppose that there were no violent deaths; on the contrary we have sufficient evidence to the fact that there was, and probably a short time before the deluge the carnage may have been alarming; still the vengeance of God appears to have been particularly aroused by the lewdness and depravity of a resembling cast. We learn that the children of Cain must have been very numerous, for he built a city and called it Enoch after the name of his son. This was the first city built on earth, and it appears his descendants had become sufficiently numerous to require the use of one. It is likely these

* Dr. Clarke says that "Ham was certainly the youngest of Noah's sons," and afterwards he says Shem was the youngest. See Commt. on chaps. 5. and 12.

wicked men clave to each other not only to afford Cain protection, who was liable to be slain according to the then prevailing law by the nearest relative of Abel, but also the curse of the non-production of the earth may have followed Cain's descendants to the fourth generation, causing them to be ever in poverty, and hence, as Josephus says, they likely unitedly lived by robbery and plunder. It might be also observed that Josephus states that Lamech had seventy-seven children by two wives, Adah and Zillah.

I make these observations, however, not for the purpose of directing to a universal deluge, as they would have little weight to bear out such a conclusion, but rather to show the totally corrupted state of the earth in those early ages, and the truly sufficient depravity to excite the anger of that just and perfect God to destroy the creatures of His hands by the waters of a deluge. Among the swarming crowds of men and women that then lived, not a person but the truly faithful Noah was found righteous in the eyes of the Lord. Sodom itself ranks not as a comparison; and it seems plain that their iniquities, as were those of the Sodomites, were increased and multiplied by their dwelling together, occasioned both by a universal language and the fruitfulness of the earth. It is indeed too well-known that the ill-disposed are never so liable to dissipation and the perpetration of crime, as when thronged together in obedience to the prompting passions. Even in the present enlightened age, a miniature picture of antediluvian bustle is not unfrequently presented to our view in passing the ale-house and the groggery, which may indeed appear as a more perfect similitude, when we consider the certainty of spirituous liquors being known before the flood, as they were afterwards known to Noah. It is easy to imagine such a state of things,—no peace, no safety, no pleasure. It

could not be said that the dark corners of the earth were then full of the habitations of cruelty, but the earth itself. We know, for instance, that in proportion to the extension of individual crime, the affections become lean and inactive; and it is to be observed that not only cruelty to each other but cruelty to animals was doubtless practised to a great extent in this morning of time. This appears fairly deducible from the Divine address to Noah: "But flesh with the life thereof, which is the blood thereof, shall ye not eat," Gen. 9: 4. The offence herein contained is nothing more nor less than eating the flesh taken from a living animal. "Bruce's account of the Abyssinians eating the flesh of a living animal," to borrow the words adopted by Patton, "was long thought incredible, but is now generally admitted. The circumstance related is, that three soldiers, driving a cow, stopped short, threw down the animal, opened the skin above the buttock, cut out two steaks therefrom, which they placed on their shields, restored the skin with skewers and a cataplasm of clay, and afterwards drove on the animal. Thus," he continues, "they ate *the flesh with the blood*, as it appears Saul's soldiers did in one instance." See I Sam. 14: 33. Now as this God forbid to be practised, which from the time of the deluge till he addressed Noah, long or short as it may have been, was not practised, the presumption is that this most barbarous of cruelties had formerly if not a universal, a common prevalence. But we are not from this to form the opinion that the antediluvians had any grant of animal food, even was it prepared in the most assuasive manner, and hence the bounds of their iniquities seem even more extended. That animal food was not lawfully to be eaten before the deluge seems evident from its grant to Noah, for if he had before freely used it, why now grant it? and it seems expressed

in such terms as certify that "the green herb" was as yet the only food appointed for man's support. It was exclusively vegetarian. Some have nevertheless taken a decidedly opposite view on account of the distinction of clean and unclean before the flood, as we see in the direction to Noah in bringing them into the ark; still it is quite certain that this distinction refers only to the animals admissible in the offering of sacrifice which no one that believes the Bible could deny was practised in the antediluvian times. But Calmet and others, who have taken this side of the question, produce no additional argument capable of carrying the point. Dr. Lardner remarks that as the offerer generally partook of the victim, we may infer the use of animal food; or wherefore, he enquires, was Abel a keeper of sheep? To this we offer in reply the following: 1. There is no evidence, as I have yet seen, that there was any ordained body of priests before the deluge, as in the times of the Mosaic economy, but rather every person acted for himself: at all events it was so with Cain and Abel, and the priest or person who offered for himself did not partake of his own meat-offering (see Lev. 6: 23), but only of the meat-offering of the people for whom they offered it. 2. Because Abel was a keeper of sheep it does not necessarily follow that he ate animal food, inasmuch as they are valuable for other purposes. Indeed it seems quite plain that sheep were in those early times kept principally for their milk; and that milk was then used, I see no reason to doubt. And from what was it obtained if not from the sheep and the goat, which yield the richest in the world? for we read of no domesticated kine in those early times. The flock of Laban, of which Jacob acted as shepherd, though said to have been "cattle," consisted entirely of sheep and goats. (Gen. 30: 32). Also as the skins of animals were then used exclusively

as garments, and evidently for mats on which to sleep, it is forcible that they were cherished for their excellent coat.

The employment of shepherds appears to have been among the first and principal before the flood. Noah, it is almost certain, followed this occupation while building the ark. Dr. Clarke, however, strangely supposes that he was a husbandman, as he was afterwards; but this seems to exclude the force of the term *began*, in the text: "And Noah *began* to be an husbandman; and planted a vineyard" (Gen. 9:20). The pastoral life was followed on a large scale by Jabal, who was the inventor of movable tents, as with the Arabs at the present day; and indeed it seems plain that in those times a part of the descendants of Cain were pastoral wanderers, like the wandering tribes of the East. But we are not to suppose that they led a roving life on account of the production of the soil not being adequate to their support, but for the purpose of rapine and violence, and perhaps of trading, as Cain was the author of weights and measures.

The evidence we draw from these remarks is, that the earth before the deluge was, in point of fruitfulness, far in advance of what it was posterior to that event. The soil was then everywhere productive, yielding a luxurious and abundant vegetation; and as the earth was then in the state in which it was adjusted by the Creator, it necessarily follows that it was perfect—that its surface presented no barren wastes, as now; no desert scattered its burning sand—no foul Sahara breathed its deadly blast. If we admit that the soil was then no more fruitful than afterwards, we are truly taking a very uncharitable and narrow view of the completed and untarnished works of God; and until it can be shown that animal food was granted before the flood, which we may confidently challenge any man to prove, I see no alternative

than to acknowledge that that event produced a dire change in the fruitfulness of the earth ; for if Noah was the first whom God directed to eat animal food, it was only because vegetable nutriment was now inferior to that on which he had formerly subsisted ; and if in this point of view it was necessary, we can hardly dispense with the conviction that vegetable products were vastly richer, more nourishing, and more conducive to health and long life before than after that epoch ; for if Adam could live 930 years on "the herb of the field," why not Noah ? (See Gen. 8:18.)

It will not be very difficult to have a correct view of the truly vigorous vegetation of the antediluvian world, when we consider that it was not as now parched by a blazing sun for weeks together, as in our climes, without the slightest drop of moisture, but nocturnally drenched with a copious dew, which was then the only source of moisture. The garden of Eden, we are informed, was watered with a very heavy dew, as it is rendered *flood* in the margin (Gen. 2:6). It is a presumption, therefore, that there was then no rain, for in countries where there are heavy dews, it seldom or never rains. It has been a prevailing opinion among the learned in all ages that there were rains before the flood, as there were after it. There is scarcely a commentator but holds this doctrine, and yet, notwithstanding, it is entirely unfounded. The first objection to such an interpretation of the different passages that disclose the idea, is the uniformity of climate necessary for the happiness and protracted life of the antediluvian patriarchs. If the atmosphere had been subject to such violent changes as it now suffers, it is difficult without the insertion of a miracle (in argument, which is in no case admissible, unless demanded by the text), to conceive why they lived to such a long period of life, when the life of man

gradually shortened after the flood. As I have already said, Adam himself was as much mortal before the fall, as he was after it, or as much so as Noah or those that lived long after the flood; and the only reason that he would not have died according to that law, in continuing in obedience, was that he was ever kept in a restored state by "the tree of life in the midst of the garden." We often hear, especially from the pulpit, "the seeds of mortality have been sown in our system." What a mistake! There was *no sowing*, or anything of the kind. Man, as far as his corporeal organization is concerned, was necessarily mortal on his first emergence into being; and when the life-giving tree was guarded from his reach, he became subject to that universal law of death which has ever reigned in the two kingdoms of nature—animal and vegetable—since the first nomad of vital organization commenced its career upon our planet. Now, if men lived in general upwards of two hundred years in those days, we are forced to the conclusion that not only the earth became less productive afterwards, but the climate itself underwent a not less detrimental revolution. But it may be inquired, if the climate before the flood was more salubrious, and the soil more productive, how is it that the postdiluvian patriarchs lived to a great age? We reply, as we have stated before, that the life of man *gradually* shortened after the flood, on account of the food and climate being less agreeable and healthy. The earth, we must believe, was for many years after that event very fruitful, occasioned by the detritus collecting upon the soil; but as this gradually lost its richness,—like the deposits of the Nile,—the life of man gradually shortened. Now whoever denies this will be expected to show *his* cause. We frequently hear it said, that God has appointed man a certain time to live, and that

he has fixed and changed its limits a number of times ; but for this I see no foundation. The only instance we have of God's limiting man's life, in its widest sense, was his permitting him to live but a hundred and twenty years (Gen. 6:3.) Now if we are to look to natural causes for the continual decline of the life of man, we are bound to acknowledge that the flood was the grand first cause ; since man's life, prior to that event, was, at all events, uniform, while afterwards it became gradually shortened. The inference therefore is, that the deluge produced a great change in the atmosphere, not only because a change sufficient to decrease the fertility of the earth would act equally disastrous upon the atmosphere, but also from the certainty that the atmosphere has even a nearer relation to the prolongation of life than the vegetable kingdom. Then the conclusion is, that the changes of atmospheric temperature, which only can in this case be considered, was the principal agent in the continued reduction of human life after the flood ; and hence the atmosphere could not have been in this state in the times of the antediluvian world ; and as rain is the result of such changes, it follows, that there was no such thing as rain before the flood. There is no animal that is more affected by sudden changes of temperature than the human ; and even when well clad with the thickest clothing, which tends to modify their baneful effects upon the system, we are not unfrequently attacked with feelings of severe indisposition. I therefore cannot see how man in his first state of happiness, and the only being without natural clothing, could placidly endure such changes of temperature. It is the current belief among all Christians, that our first parents were primevally stationed in a beautiful garden, where continued summer ever reigned, and where there was no annoyance from the

changing of the influences of the elements. If this opinion, which is founded upon Biblical truths, be carried out, we are deprived of all means whatever in arguing that they were acquainted with the phenomenon of rain. Indeed I know of nothing, if it was then as now, that would have a greater tendency to militate against their happiness; and it appears quite forcible that the pen of inspiration was particularly directed to an opposite testimony, for we read as late as "the sixth day," that "the Lord God had not yet caused it to rain upon the earth" (Gen. 2:5). Now if the earth was so constituted that there was no rain for a number of years after its final organization, it is utterly unphilosophical to consider that rain could, under these circumstances, result as a *natural* consequence. We are therefore entitled to this deduction, that there must have been a great change in the constitution of the earth, either in the surface or her position in her orbit, or both, before such a phenomenon could happen; and as no such change took place from the third day till the times of the flood, it irresistibly follows that there was no such thing as rain till the ushering in of that cataclysm. But there are other evidences. It is not only remarkable, but wonderful, how the Scripture text has been writhed, and probably conscientiously too, by the greater number of the interpreters of Genesis, to carry out preconceived, and yet unfounded, notions. When Noah came out of the ark, God assured him that he would never again destroy the earth with a flood, and that he would set his bow in the cloud as a token of his covenant between him and every living creature for perpetual generations (Gen. 9:12). Now the majority of commentators affirm that God only appointed the rainbow as a sign to Noah, and that it was seen before—an idea based upon the caprice that it rained before the flood, as the rain-

bow is the natural effect of the sun's rays falling on the drops, and of their being refracted and reflected by them. But such an affirmation is not only groundless, but conflicting with the general force of the terms in the address to Noah. If the rainbow was seen before, it is truly a most singular circumstance that God would direct Noah where and when it would appear, and that it should not only once appear, but that it should continue to appear as a token of his promise to after generations. Why tell him that it should always afterwards appear, if it was a constant natural visitant before? Why direct him to look to the cloud if he knew already? That the rainbow was never visible before, is also manifest from God's twice assuring him that it should be seen (Gen. 9:14, 16). This also gives tone and sense to the term *set* (*I do set my bow*), which is excluded by the general opinion. During the forty days' rain the bow was invisible, as the whole atmosphere was saturated, which was necessary to produce a general rain; and the rainbow is only seen in showery weather. If therefore there was no rainbow before the flood, there was no rain. It is also worthy of remark, that the apostle Paul in his epistle to the Hebrews (chap. 11:7,) says, "By faith Noah being warned of God of things not seen *as yet*." Was this the flood only? He must have included more than this, as the word *things* is in the plural. I know not what this is intended to point out if not the rain and the flood; and if so, we have an additional proof of the absence of rain in the antediluvian times. The world of infidels would naturally argue that what they had not seen could not in nature come to pass.

If our earth, at the present day, stood with her axis at right angles to the plane of her orbit, there would be comparatively few changes going on in the atmosphere, and conse-

quently few changes in the weather. Rain would, in the greatest probability, never fall, and storms would be forever unknown. Now, if it can be shown that the earth was in this position before the flood, we have one incontestable proof of the absence of rain till the times of that event. This I consider to appear very plainly and forcibly from both the Scriptures and geology. Let me remark, in the first place, that I am entitled to this basis—that the placidity of the atmosphere was the chief cause of the protracted life of the antediluvian patriarchs, and if this were the case, nothing less than the inclination of the earth's axis could have brought about the present change: and I would indeed like to see a reason given, with reference to natural causes for the extended life of the antediluvians, without acknowledging that our earth was then a parallel sphere, and that it owes its obliquity to the deluge. 2nd. We read that God gave a promise to Noah, after his leaving the ark, saying, "As yet all the days of the earth remaineth (margin), seed time and harvest, and cold and heat, and summer and winter, and day and night shall not cease." (Gen. 8:22.) Now the phrase, "*As yet all the days of the earth remaineth,*" implies that, though day yet continued, it was in some way visibly changed, and God assuring Noah that *day* and *night* should *not cease*, i. e., that day should succeed alternately with the night, implies that day was about to cease and that night itself, not "day and night," would ever continue (see Jer. 33:20, 25). It is deducible therefore that the day was not only changed but continually growing shorter, or what excited Noah's fear that it was about to cease. Of course, he well knew that night is only the absence of day, and therefore it was the latter that is particularly referred to in the text. Now, how shall we account for this language? God would

not have used these words unless called for. Nothing can be more plain from any sentiment than this fact from these words. Noah, all his lifetime, had observed that the sun, when in his meridian, was in his zenith, when day and night continued equal; but now, to his great astonishment, he observed that the sun had retreated and was still retreating towards the southern horizon, which, if it reached, would forever conceal his day-creating beams, and hence the reason why God thus addressed him. That God made a *particular covenant* with Noah, that day and night should "be in their season," is seen from Jer. 33: 20, 25 (see p. 194). Here, then, we have a proof in the Bible, that the earth inclined at the time of the flood. This inclination we are not to suppose was affected in a moment or in a day, but was gradual, caused by the forces in action upon the surface, when "the fountains of the great deep were broken up." And it is evident that it required an Almighty hand to arrest this motion towards the north, or the earth would ever after have had two motions in place of its diurnal.

3rd. As I have noticed in a former place, our first parents could have known but one season, and that continued summer, not only because they were naked, which is in itself sufficient to carry the point, but also from the fact that as they subsisted exclusively on vegetable food, it must ever have been upon the trees. It is very likely the mighty Milton observed this when he wrote—

Some say he bid his angels turn askance
The poles of earth, twice ten degrees and more
From the sun's axle; they with labor pushed
Oblique the centric globe.

At that tasted fruit,
The sun as from Thyéstean banquet turn'd
His course intended; else how had the world
Inhabited, though sinless, more than now,

Avoided pinching cold and scorching heat?
These changes in the heavens though slow produced
Like change on sea and land ; sidereal blast
Vapor and mist and exhalation hot
Corrupt and pestilent —Paradise Lost, Book X.

But, though his reasons are quite proper, yet the event is not referred to the proper period, for Adam, all his lifetime, lived on vegetable food. When he was deprived of the delicious fruit of Eden, he was doomed to subsist on "the herb of the field" (Gen. 3:18). And as the fact has already been established that it did not rain before the flood, we have several scriptural witnesses which all conspire to prove, that the earth, in the antediluvian ages, revolved with its axis at right angles to the plane of its orbit, and owes its present inclination to the deluge.

But, 4thly. There are testimonies in geology that corroborate these scriptural facts, and which cannot possibly be subject to any other than a correct interpretation. Geologists, by their arduous labors and untiring zeal, have discovered that during the deposit of the *alluvium*, which is the strata geologically ascertained to be the human period, a remarkable change in the temperature of the countries situated between the tropics and the polar circles, has taken place, and that the climate of the United States, for instance, at no very remote period, was not unequal to that of the equatorial countries at the present day. Now, this must have been changed at some great epoch since man's creation, inasmuch as it is recorded upon the geologic tables of the human period. It is found that some of the bulky quadrupeds, as, for example, the mastodon, that inhabited our continent during the deposit of the alluvial formation, have now no place in creation, and their remains are found embedded in the soil in great numbers. No less than a

hundred skeletons of this enormous quadruped have been conveyed from "the Big Bone Lick," in Kentucky,—a fact that strongly argues a comparatively recent and sudden change in the climate, for their bones have been found as far to the east as Berlin, in Connecticut, where a rigid winter now reigns, that could not have been endured by the mastodon. It is only to a *sudden change of climate* that we may, with Dr. Hitchcock, attribute the premature destruction of this mammoth species of animal; and as geology refers this event to an era somewhere in the neighborhood of the deluge, inasmuch as some have argued that it was antediluvian and others postdiluvian, we are entitled to the conclusion that the deluge inclined the earth's axis, lowered the temperature in the vicinity of the now temperate regions of the globe, and proved their destruction. Science and revelation therefore strikingly coincide in the declaration of the great and marvellous changes in the past condition of our planet; and here pointedly unite in showing that the works of the Deity were prematurely and intentionally destroyed; and as geology furnishes no evidence of any such sudden extinction of new-created species in the whole pile of geologic records, at all events, of the unwieldy creatures, we are at liberty to conclude that *the wrath of God* was recently and sufficiently kindled to roll in this fatal visitation of his displeasure upon the flourishing works of His hands. Even if we set aside the teaching of the Bible in connection with the flood, geology itself teaches that such a miraculous interference took place in the movements of nature at no very remote period, and which any Christian could not fail to identify with the deluge of Noah. Geologists, however, have long said that there are no indications in the strata of this great catastrophe, as recorded in the Bible; still we have

sufficient grounds for the opinion that they have at all events observed some and indeed many, but could not, in consequence of their enthusiasm in arguing a partial deluge, refer such phenomena to that event, and in fact they would be ever unwilling to do so, as the conclusion would somewhat interfere with some of their long adhered to interpretations. And what has this serious course, pursued by geologists, been the means of influencing? Nothing less than consolidating the deep yet blasphemous doctrine of the late celebrated Bishop of Natal, who has made rapid strides in his strenuous but ill-fated labors towards turning the Christian world "upside down." Indeed this learned, and would it be right to say, deceitfully pious Colenso has spread his wisdom, if not the belief of his heart, before the world, moving on the tide of criticism and eloquence, maintaining or rather asserting that there never was such an event transpired as the deluge of Noah. I will quote from the preface of his *Pentateuch and the Book of Joshua* (Part II), page 18.

"Let us suppose," we there find him saying, "a clergyman to begin to 'inquire,' having a difficulty about the deluge put before him by some intelligent layman of his flock. If he does this, he will assuredly soon learn that the results of *geological* science absolutely forbid the possibility of our believing in an universal deluge, such as the Bible manifestly speaks of. He will find also that *mathematical* and *physical* science, as well as the plain texts of Scripture, equally forbid our believing in a partial deluge, such as some have supposed, since that involves an universal flood. Rather without any appeal to science at all, if only he allows himself to 'think' upon the subject and to realize to his own mind the necessary conditions of the supposed event, he will need only a common practical judgment to convince him that the story

which is told in the book of Genesis is utterly incredible—which involves the necessity of Noah taking in a supply of animals or of animal food, for the special use of the carnivorous beasts and birds, and of Noah and his family taking round, two or three times a day, food and water to such a multitude of animals, supplying them daily with fresh litter, (how stored and kept?) and removing the old—with other considerations of the same practical kind, as, *e. g.*, that the supply of *light* and *air* for the whole community in the ‘lower, second, and third stories,’ Gen. 6:16, was to be furnished by *one* very small window—‘and a window shalt thou make to the ark, in a cubit (twenty-two *inches*) shalt thou finish it above,’—which window, however, seems never to have been opened till the end of the deluge, Gen. 8:6, (if indeed it *could* have been opened during the fall of rain); in which case, as they had no glass in those days, the inmates of the ark could have had neither light nor air.” So far Dr. Colenso. But the question forcibly presents itself to my mind, whether the learned bishop in all his lore, moral excellence and wit, has ever minutely investigated his *geological* science sufficiently to warrant that its results “absolutely forbid the possibility of our believing in an universal deluge, such as the Bible manifestly speaks of.” These important results referred to by the Doctor, we are sorry to say, have never been issued from the public press, but such as we have will require to be looked into. But before noticing the veracity of this able remark, it will be necessary to have a correct idea of that “universal deluge, such as the Bible manifestly speaks of.” Now his reverence either implies that the Bible teaches that the flood submerged every particle of dry land on the face of our planet, or that it was, in the words of Miller, “universal as to mankind.” It cannot be that he

rejects the latter position from geology, as he would be standing in his own light ; for that very geological science, and its authorities that form the ground of his statement, will not submit to this assertion, for geologists universally and unanimously agree that the *Scriptura* furnishes at all events no evidence that there did not happen such an occurrence as the Noachian deluge, and the grand reason why they have argued a partial deluge was, the liberty granted in the undefined terms of the Scripture text, of which the keen Doctor now takes advantage. But the fact is, he asserts, that the Bible teaches an universal flood, *i. e.*, universal as to the earth's surface, and that the text "forbids our believing in a partial deluge, since," he continues, "that involves a universal flood." Indeed he must have great confidence in the judgment of his authorities, for those very geologists all agree that the Scripture text *does not* forbid our believing in a partial deluge, and moreover that it *does not* involve an "universal flood." It will perhaps be necessary for me to show, in the first place, that "the deluge the Bible manifestly speaks of," *might not have* been an *universal* deluge ; and secondly that a partial deluge does not involve an universal flood.

First.—It is easy to conceive that this writer's arguments are throughout untenable, unfair and deceitful, for while he professes to teach the true character of the ancient Hebrew language, and to be able to bring out its real force and meaning, yet he does so only in particular passages, phrases or terms that are in our translation *opposed* to his theory ; while, on the other hand, to carry out his peculiar vein of argument, he piles on all the force of our English terms, as is found in the common Scripture text, upon the mere literal translation of the Hebrew. This I consider as one of the most ungentle-

manly acts of which any pretended Christian writer would stoop to be guilty, as such a course blinds the eyes of the "plain English scholar" instead of opening them, and shatters his faith in the Scriptures, and yet the result of false premises and false deductions, and what caps all, acted off under the wing of the Bible. But we have in a former chapter shown—a fact that Colenso himself well knew—that the Bible is not in the light and weight of our own language literally true, inasmuch as every language, especially an ancient oriental, has its own peculiar phraseology. I therefore maintain that the Bible does not, geographically speaking, urge an *universal* deluge, for there is not the slenderest argument that will justify the conclusion that a literal translation of any ancient document can in general bear the full force and tone of the terms used in an English translation, without destroying the sense of the original. But notwithstanding the truth of this, Dr. Colenso gravely charges the Bible on this very ground with falsity, denying it that freedom of interpretation the law of language grants it, and which the Bible itself demands in order to become intelligible. Give the Bible its right force, and it will force its rights, and this we contend it shall have.

What the "plain English scholar" would be inclined through the genius of his language to regard extravagant and even false expressions, often occur in the best of ancient writings, especially those of the Hebrew and Greek authors, among whom are ranked at all risks some that present no clue to justify the reader in doubting their veracity. This form of expression is called hyperbole. Homer, for instance, speaks of a fir tree "which" he says "was as high as heaven." Now he did not intend to declare that it was as lofty as the great ash-tree, Yggdrasill, that bore the stars for its fruit, but only that it was of an uncommon exceeding height.

These hyperbolical expressions are found also in the Scriptures : but for us to notice them in arguing against one who denies at least the Pentateuch, and we might say (because it follows) the whole Bible, would little avail on the assumption that the Bible is true. We must therefore have recourse to the reasoning process in order to show that they are correctly used as far as the honor of the author is concerned. Let us acknowledge with Dr. Colenso, for the sake of argument, that there were two distinct writers who lived in different ages, namely, the Jehovist and the Elohist, that composed the Pentateuch, and that the Elohist was, as he strenuously endeavors to determine, the prophet Samuel, who was the oldest of the two writers. Now this position demands, according to the Doctor's reasoning, that "the old seer" must have been a man of great craft and wisdom to compose a book, and impose it by its fairness upon the people. And it requires also that the Jehovistic writer must have been a person of equal sagacity to *fill in* his remarks with the current stories of Samuel after that "old seer's death," so that his falsity might remain undetected. We may, therefore, on these grounds safely conclude, that above all things, no matter how many lies they might have invented and indited throughout their historical narratives, they must have been careful to avoid making use of any expressions in common diction that would appear in the eyes of their numerous contemporaries the least absurd, let alone palpable falsehood, particularly that they might not expose their sacrilege. We then come to the conclusion that whatever hyperbolical expressions may be found in their writings, they must have been current in their day among all classes, and was regarded as not conveying the strength of the letter, but the real idea intended by the writer. Hence, if we read in the Pentateuch of a

tree "as high as heaven," we would be bound to acknowledge that this conjunctive phrase was intended to denote a tree that was remarkably, uncommonly, or exceedingly high. Well now, there are expressions in the Pentateuch equally hyperbolic. It is recorded that when the spies sent out by Israel returned from seeing the promised land, they reported that the cities of the Canaanites were "great, and walled up to heaven." In Exodus 9:25, we are told that the plague of hail "smote every herb of the field, and brake every tree of the field"; and it is said in chap. 10:12, that God commanded Moses to stretch out his hand over the land of Egypt for the locusts, "that they may come upon the land of Egypt, and eat every herb of the land, even all that the hail hath left." Again, in verse 15, it is said that the locust "did eat every herb of the land, and all the fruit of the trees which the hail had left": then the hail did not destroy *every* herb of the field in the first instance, though it is plainly said so in the text. Again, during the reign of the seven years of famine, we are told that "all countries came into Egypt to Joseph to buy corn," Gen. 41:57. Now we are not to understand that the people of *all* countries came to Egypt, but only those from the *surrounding* countries; and at the confusion of tongues we read that "the Lord scattered them from thence upon the face of *all* the earth," Genesis 11:8; see also verse 9; and here we see that the term "all" cannot be intended in its strictest sense, but indeed in a very limited one. I might refer to several other passages in the Pentateuch, in which the term *all* is similarly used—requiring great modification to complete the sense. In fact, I know of no place in the whole five books, where the word *all* is proved by the story or circumstance to denote *every one*, as we now use it. Throughout

the whole Testament scriptures, Old and New, this "sort of metonymy" is used. Dr. Colenso acknowledges the truth of the New Testament; and hence we are at liberty to refer to the same metonymic form of expression which is therein found. We read there that the queen of Sheba came "from the uttermost parts of the earth to hear the wisdom of Solomon," Matthew 12:42; that on the day of Pentecost "there were dwelling at Jerusalem, Jews, devout men, out of every nation under heaven," Acts 2:5; that the faith of the Romans was "spoken of throughout the whole world," Romans 1:8; that the gospel "was preached to every creature which is under heaven," Col. 1:23, &c. Here we have pointed proof that hyperbole pervaded the language of the Scripture writers, and therefore our opponent cannot but acknowledge that it was current in ancient times. And while we have undoubted evidence that the Pentateuch is marked with the same feature, it is not only better but we are bound to consider these expressions as having limits far beyond the bounds of the real truth itself. Hence, when we read in Gen. 7:19, that at the time of the deluge "all the high hills that were under the whole heaven were covered," we are not to understand that the Bible absolutely declares that all the hills on the entire face of our globe were submerged, but rather a greatly *less* number than we would determine by the use of that term. Then, the deluge, "the Bible manifestly speaks of," it happens, instead of being *an universal deluge*, as Dr. Colenso asserts, was as far as "manifestly speaks of" goes—a partial deluge; and it then follows that the results of geological science do not absolutely forbid the possibility of our believing in the deluge the Bible manifestly speaks of, for as I have said, a partial deluge has ever been acknowledged by geologists. Indeed,

geology teaches, on the contrary, that there has taken place in the past different "floods," and universal ones too.

His mathematical and physical science, it follows, instead of forbidding our believing in a partial deluge, also falls to the ground, since that cannot, when linked with the text, as he has it, involve "an universal flood."

He then goes on to say that "without any appeal to science at all, if only he (the inquirer) allows himself to think upon the subject and to realize to his own mind the necessary conditions of the supposed event, he will need only a common practical judgment to convince him that the story which is told in Genesis is utterly incredible." Well done for deep thinking! What a stand for one of Old England's hierarchs! Here he asserts that mere thinking without any appeal to science would discard belief in there ever having been a deluge at all, "such as the Bible manifestly speaks of," but we are glad to say that the inquirer's "common practical judgment" would, to arrive at such a conclusion, require to be founded on better grounds than Colenso's, for while he says he rejects the Pentateuch and believes the New Testament, it so happens that in the latter we find several pointed declarations of there happening such a thing as the Deluge of Noah. See Matt. 24:37, 38, 39; I Pet. 3:20; II Pet. 2:5; Heb, 11:7. The fact is, this semi-infidelity won't answer. The Biblical chain is so constructed, that if one link is cut out there is always another to supply its place; and if we use it at all we must use it at length, or it will serve us like it has served a good many others—it will hang us. Indeed the infidel has in too many instances in the same manner swung himself from a scaffold of his own building.

But let us inquire into the validity of the reasons which he

adduces to draw the conclusion that the "story which is told in Genesis is utterly incredible." It appears his chief reasons are because "it involves the necessity of Noah taking in a supply of animals or of animal food for the special use of the carnivorous beasts and birds, and of Noah and his family taking round two or three times a day food and water to such a multitude of animals, supplying them daily with fresh litter....that the supply of light and air was to be furnished by *one* small window....which window however seems never to have been opened till the end of the Deluge, (if indeed it could have been opened during the fall of rain,) in which case, as they had no glass in those days, the inmates of the ark could have had neither light nor air." Now we cannot assume that the animals were kept in a state of torpor, or were not fed as some have supposed, for the raven and the dove were not in a torpid state, and we read that God commanded Noah, saying, "Take thou unto thee of all food that is eaten, and thou shalt gather it unto thee, and it shall be for food for thee and for them." Gen. 6: 21. It is nevertheless plain that they were put upon *short allowance*, and received only a sufficiency to "keep them alive;" and we may with propriety add that their ravenous propensity was then entirely subdued, as it must have been when they came for admission into the ark. This we may judge also from the words "and the Lord shut him in," implying that he took him and all within the ark under his special care and protection. That the animals did not receive their ordinary supply of food, appears plausible from the raven's not returning into the ark. We are not to imagine with some that the raven kept upon the wing till the subsidence of the waters, for "this meaning," says Clarke, "the Hebrew text will not bear," which literally is "and it went forth, going forth and

returning," from which it is plain that she returned to the ark but was not taken in as she likely perched upon the top of the ark where she could not be reached. Now the raven must have had food or it could not have lived twenty-one days till the land appeared ; and therefore as she must necessarily have subsisted upon something, we confidently conclude that it was upon the bodies of the drowned animals floating upon the surface. This is forcible from its "going forth and returning ;" and the only reason that Noah did not again send out a carnivorous bird, is that he had learned a lesson in sending out the raven, which did not wander in quest of dry land as he desired, but loitered outside and feasted on the floating dead. Now this raven had been kept in the ark with six others (one of which was its mate as it came in with it into the ark) for several months ; and if there had not been some enticement that drowned the instinctive impulse of union, she certainly would have returned to them, for 'it is well known that birds are much attached to each other. The probable reason appears to be that she was while in the ark but partially satisfied with food, and now as she was afforded plenty, like little Frank by the fire, she was determined to "stay and enjoy it." We find a similar circumstance in the case of the dove after being sent out the third time. No one can dispute the great attachment of these birds to each other, and the great efforts they put forth when absent, to return to their mates, but here we find that as soon as she found dry land where there was plenty of food she returned no more to the ark, evidently because she was there kept upon short allowance. Really was this not the case, I cannot see why Noah, who was doubtless acquainted with the nature of these birds, did not expect her return on her discovery of dry land—he believed that she would not

then return, or what use in sending her out, and the reason assigned why she returned the first time is because "the waters were upon the face of the whole earth," implying that if there had been dry land she would not have returned,

If we look carefully into the information given in the history of the Flood, as recorded in Genesis, we cannot but see the evidence in favor of this point. In the first place we have no account of God informing Noah how long the flood would continue, and therefore he could not have known the quantity of food adequate to the requirement of the period, besides it is more than probable that he had a faint idea of the number of animal species that were to depend upon his supplies. The Creator must therefore have attended to this on the day of their entering in, and made an allowance to each order in proportion to the capability of their endurance and the dimensions of the ark. Indeed this is placed beyond doubt by the comparison of the two following passages :

"Of every living thing of all flesh, two of every sort shalt thou bring into the ark to keep them alive with thee ; they shall be male and female. Of fowls after their kind, and of cattle after their kind, of every creeping thing of the earth after his kind, two of every sort shall come unto thee to keep them alive." Gen. 46 : 19, 20.

But in Gen. 7 : 2, 3, the order is given thus :

"Of every clean beast thou shalt take to thee by sevens, the male and his female, and of beasts that are not clean by two ; the male and his female ; of fowls also of the air by sevens, the male and the female, *to keep seed alive upon the face of all the earth.*"

I am sorry to remark here that commentators and all Christian expositors of the Scriptures have expostulated the meaning of the intelligible portions of Scripture, and omitted

any explanation whatever of the clandestine and the difficult. We may search the glosses of the most noted biblical expositors in vain for a reconciliation between the above passages, which Colenso quotes as proof of the unsound teaching of the Bible. In fact for centuries infidels and semi-infidels have harped upon them without refutation; and Colenso, it appears, has determined on keeping up the tune. "It is impossible," he remarks, "to reconcile the contradiction here observed in the numbers of living creatures to be taken into the ark, especially in the case of the fowls, of which *one* pair of every kind is to be taken according to the first direction, and *seven* pairs according to the second." But I ask the reader to reason with me, and let us see if these passages involve a contradiction, as this ninth wonder of the world makes out.

Christian authors have been much perplexed in dealing with the latter passage. Some suppose that this was intended to signify three males and three females, and an extra male for sacrifice on Noah's leaving the ark, while others have accepted the more apparent teaching of the text, which evidently implies seven males and seven females. This seems plain, even if the two passages as quoted above were the productions of two different writers, as Colenso affirms, for immediately after it is said that the clean animals were to be taken in by sevens, it is said "of clean beasts . . . , and of fowls . . . , there went in *two* and *two* unto Noah into the ark, the male and the female," verses 8, 9. The original in this point of view has its full force, as it is *seven, seven*. But let us ask the question, when did God say to Noah that "two of all flesh shall come unto thee to keep them alive?" Was it not when he directed him to build the ark? It was; and doubtless he said this that Noah might have no doubt

upon his mind that it was to be larger than necessary. This was, as it proved to be a *general rule*, in the same way as the Lord said that he would destroy man with all he had created from the face of the earth before he made the exception that he would save enough of all species to repopulate a new world. But since Dr. Colenso has exhibited his keenness, will he have the goodness to show that the words "all" and "every" in Gen. 6:19, 20, must mean *all*. Indeed the tenor of Scripture is against him; and if these words are to be regarded in a limited sense, why not the language—why not the words two of every sort? If "all" flesh and "every sort" did not actually come for entrance into the ark, why should we urge that the Scripture teaches that "two of every sort" was all that should enter, of the whole animal race? and it must be remembered that the word *sort* is in italics, and therefore, not in the original, and is not intended as a distributive term to imply two of every sort of fowls, two of every sort of cattle, &c.; but the sentence *two of every sort shall come unto thee*, is merely appended to make the former direction emphatic, meaning "two of every sort of all these animals (as a whole) shall come unto thee." The presumption therefore is, to those who believe the Bible, that Colenso is mistaken, when he says, that the fowls were to be taken into the ark by twos, according to the first direction, and therefore, clashing with the direction that they were to be taken in by sevens. This is a conclusion to which we who believe the Bible, are entitled, and involves no greater difficulty, when looked into, than other passages to which I have referred, especially in the case of the plague of hail.

Colenso explains this supposed contradiction, from his well known hypothesis of two writers, having in different ages composed the Pentateuch. The first, he asserts, is by the

hand of that writer who uses only Elohim, and the latter by the other writer who uses only Jehovah. But this reason cannot be admitted as sufficient, even by those disposed to credit his doctrine, for the Jehovist himself involves as great a "contradiction" in his own composition, in the passages referred to above (Ex. 9 : 25, 10 : 12, 15.), and therefore, this is no proof that there were two writers.

But when did God direct Noah to take the clean animals and the fowls of the air by sevens? Was it not seven days before the coming of the flood, and at the time the animals were thronging round the ark? It decidedly was. Well then, did Colenso ever reason in his mind why Noah was not thus directed before,—why the flying tribes and the clean animals were to be taken by sevens, and the unclean animals by twos? It could not have been because they were likely, some of them, to die in the ark; and one pair of clean animals and fowls would keep seed alive, as well as one pair of unclean. And it could not be imagined that these were purposely brought in such numbers as to afford subsistence for the carnivora, after their having left the ark, as this was uncalled for, as the bodies of the drowned on which the raven fed, were sufficiently numerous to sustain, probably, a vastly greater number. We would infer that they were very plentiful in the neighborhood of Ararat, not only because the raven fed upon them, (which would argue that they were numerous, for they must ever have been in motion), but we read that "All in whose nostrils was the breath of life,—of all that was in the dry land, died," doubtless meaning that they were to be seen after the flood. It must be remembered also, that many of the carnivorous animals could live for a length of time exclusively upon vegetable food; and a vast number, included in the *unclean*, are exclusively herbivorous, besides

those of the larger carnivora multiply exceedingly slow, while the smaller, on the contrary, increase very rapidly ; and hence one part of the unclean animals would nearly or quite support the other. Again, the probability is, that the greater part of the smaller unclean animals multiplied during the time the waters were upon the earth, and others, probably, after the ark rested. This may have been the cause of God's permitting the ark to rest upon the mountain seven months before the earth was dried. This is nothing incredible, for if the human race entered in the ark, why not the other races ? and that there were children born in the ark we are certain, from the fact that " Shem begat Arphaxad two years after the flood," and Shem had two sons older than Arphaxad, Elam and Asshur, (see Gen. 10 : 22 ; I Chr. 1 : 17) who must have been born in the ark, for there were only eight persons that entered. Observe also, that the word rendered *kind* in Gen. 8 : 19, is by *families* in the margin. We have, therefore, no reason to suppose that the additional six pairs included in the last direction, were added—if added they were—to make a speedier multiplication upon the earth, after the waters had subsided. But we read that God directed Noah to take into the ark of all food that is eaten !! The term *all* I regard in the same light as used in other places in the Pentateuch, and, therefore, does not necessarily mean "all." Indeed, how could Noah, without the assistance of a miracle, collect animal food for the carnivora ; and what need of bringing living animals, which he must have done, if at all, a length of time before the coming of the animals that were to be saved ;—how did he support them ? and it is not likely he knew exactly when the flood would come, as God told him only after, or when the animals were assembling. Assuming, then, that the Bible is true, we enquire why did not God tell

Noah, in the first place, that the clean animals and the fowls were to be taken by sevens? Would not Colenso himself—if he is, as he pretends to be, willing to submit to the voice of reason—say that the extra six pairs were intended for food for the carnivorous animals while in the ark? For what else necessarily were they? What need of taking in such an additional crowd of clean animals, and such a motley group of birds? If then they were intended as food, which I am satisfied, the majority of my intelligent readers will acknowledge the first direction does not clash with the second, as Colenso makes out; for in both cases “two of every sort” *did* come to Noah, “to keep them alive.” No doubt the requisite quantity of food was calculated beforehand, the same way as was the necessary size of the ark, by the omniscient Creator, and He evidently told Noah when, how often, and how much to feed each animal, which might have been three times per week. Noah was not transporting animals across the ocean to sell at the slaughter-house, but was only directed “to keep them alive.” We cannot, therefore, stoop to the vile doctrine of some, that Noah was turned into a mere slave, in feeding and taking care of the animals, as his exertions, if more than adequate to moderate exercise, were uncalled for. There were more persons than one in the ark. We are not to imagine that the aged patriarch, bending beneath his centuries, was day and night waddling from one pen to another, and gentle Shem and his brothers snoozing in the loft. As God intended Adam to exercise himself in Eden, so he never seats his choicest creatures at the head of the world with nothing to do. God might have so arranged the matter that he fed every day, and hence had constant yet unwearying employment.

But there is another objection that Colenso brings forward

against the story of the deluge. He finds a great inconsistency in admitting "that the supply of light and air for the whole community . . . was to be furnished by *one* very small window . . . which window however seems never to have been opened till the end of the deluge." We might remark here that this "very small window" referred to, was built by Colenso instead of Noah, and as we are not interested in his architecture, we will only consider the window of which the Bible speaks, and which is not said to have been either *small* or *very small*. We most confidently challenge him or any one else to show that this window that Noah made was very small, or that it was too small to afford the necessary quantity of light and air. But can he show from the original, to which he so freely clings, to take advantage of "the plain English scholar," that this window was so constructed that when closed it would admit "neither light nor air"? I would like vastly to see it done. Upon this point I quote from Clarke's commentary, page 69 :

"What this was (window we render it), cannot be absolutely ascertained. The original word *חַר* *tsohar*, signifies *clear* or *bright*; the Septuagint translates it by *επισυναγων*, "*collecting*, thou shalt make the ark," which plainly shows they did not understand the word as signifying any kind of *window* or *light*. Symmachus translates it *διαφανες*, a *transparency*; and Aquila *μεσημβρινον*, the *noon*. Jonathan ben Uzziel supposes that it was a precious luminous stone, which Noah, by divine command, brought from the river Pison. It is probably a word which should be taken in a collective sense, signifying *apertures for air and light*."

Let us acknowledge that this is correctly rendered "window," is then the totally absurd idea to be forced upon us that this when closed afforded "neither light nor air?" A

queer window that! Will the original referred to by Clarke recognize this, or will reason? As Colenso remarked "they had no glass in those days;" and it would certainly be very charlatanical in view of ancient customs to say, that their dwellings enjoyed no light during the day, especially windy ones, without an open space in the side. Does it not seem plain that this window afforded light when closed, for the windows of the ancients, it is likely, differed little from this, and they were not entirely closed up with an opaque substance. "They were latticed," says Kitto, in his *Cyclopædia of Biblical Literature*, p. 411, "and thus gave free passage to the air and admitted light, while birds and bats were excluded. In winter the cold air was kept out by veils over the windows or by shutters with holes in them sufficient to admit the light." (I Kings 7:17; Cant. 2:9.)

It is conclusive, therefore, that what we are to understand by the term "window" in this place, is a space of *lattice-work* to admit the light and the air; and it was not simply a cubit square, for it was to be finished "in a cubit above," *i. e.*, that it should occupy the cubit at the top, and should extend the whole length of the ark along under the eve.

Commentators in general suppose, with Colenso, that this window was in the roof of the ark, and not in the side. Really I cannot see what could dispose such a supposition. If the window was open-work, as it must have been, and seated in the roof, during the forty days' rain, the ark would have been filled; besides, supposing this to be true, it really seems strange that we read (Gen. 8:13) that "Noah removed the covering of the ark, and looked, and behold the face of the ground was dry." Had the window been in the roof, he could have seen the dry ground before removing the covering, even was it but twenty-two inches square, as Colenso

tries to make it appear. Now if it was in the side, which may have faced little or no dry land, he could not see what was on the other side till he removed the covering. This window may or may not have been constructed to be opened; and even was it movable, Colenso produces no consternation when he says that it "seems never to have been opened till the end of the deluge" (Gen. 8:6). But I am disposed to think that the window which was opened for the purpose of sending forth the raven and the dove was another arrangement. It would appear rather a difficulty to manage the huge air-provider under the eve; and it is said that "Noah opened the window of the ark *which he had made*" (Gen. 8:6), implying that this was an opening that he had *directed* and *made* himself, independent of the building formula. This seems admissible, or how could he remove the excrement of the animals, if there was not an aperture for that purpose in the lower story, to which that in the second and third stories could be with little difficulty conveyed. But how could this be in the lower story during the rush of the waters of the flood? The probability is, that Noah cut this aperture after the ark rested, which he could manage to close with a slide, or some other way, according to circumstances. This view gives the reason why the inspired writer, after saying that "Noah opened the window of the ark," added the relative clause, *which he had made*. This is also strengthened by the original, for the word rendered window in the last passage is not the same as that employed in the first instance (Gen. 6:16), a fact that shows they were at all events two different things.

Such is what I consider as my own views,—the real teaching of the text. It is scarcely a wise step, even for great men at the present day, to undertake to undermine the Scriptures.

Such a course has been more than once pursued before, and was attended with that success which will eventually crown the wise Colenso,—not only refutation, but, we fear, an alienation from God, by the withdrawal of his Holy Spirit. It is true he challenges any one and every one to meet him in the contest, still this is far from being what infidels would style a happy omen of his destroying the Scriptures.

Voltaire boasted that with one hand he could overthrow the edifice of Christianity, that required the hands of twelve apostles to build it; but unfortunately he failed in his enterprise, and died without the victory. And the self-same press which he employed at Ferney for printing his blasphemies, was afterwards employed in printing the Bible. In the same way will the writings of Colenso redound to the good of souls and to the glory of God, inasmuch as the most difficult passages will be brought under notice, and will call forth the abilities and exertions of every patron of Christian liberty. We know that it has long been held that there are passages that cannot be cleared up, but we also know notwithstanding that they are *capable* of being cleared. Infidels have raised an objection concerning the law of clean and unclean animals (Lev. 11), holding that this is violated in the case of the camel, which is forbidden, and which they assert not only chews the cud, but is cleft in the hoof; but this has, like many other samples of their doctrine, run its race; for on a recent examination, Professor Michaelis ascertained that the cleft *is not quite through*. It was once asserted in my presence by an ignorant infidel, that the prophecies by Jeremiah and Ezekiel clashed,—for the first said that Zedekiah, king of Judah, should be carried a captive to Babylon, and the latter said that he should not see Babylon. “Well,” I answered, “is not this true? Are not both correct?”

Was he not taken there ; and did he see it ? How can a man see without eyes ?" (See Jer. 52:11). Such is the depth of infidel wisdom. Ah ! you infidels are super-almighty men : you can *lie*, and that is what God cannot do ! (Heb. 6:18).

Dr. Colenso, however, professing to be of a superior talent, notes the following passages that contradict each other :

"In the first (chapter of Genesis) all 'fowls that fly' are made out of the *waters*," 1 : 20.

"In the second, the 'fowls of the air' are made out of the *ground*."

Rem. This apparent discrepancy is, it is true, puzzling to his "plain English scholar," but soon vanishes on his taking up his Bible with marginal notes, for there it is seen, that nothing is said in the Hebrew of the making of the "fowls that fly," as it is rendered *let fowl fly*, which, says Bagster, is more conformable to the original. The passage, therefore, should read thus :

"And God said : Let the waters bring forth abundantly, the moving creature that hath life, and let fowl fly," &c. Again, he says :

"In the first, man is created in the image of God." (Gen. 1 : 27.)

"In the second, man is made of the dust of the ground, and merely animated with the breath of life ; and it is only after his eating the forbidden fruit, that the Lord God said, "Behold the man has become as one of us, to know good and evil." (Gen. 2 : 7, 3 : 22.)

Rem. All that is necessary to observe here is, if Colenso can show that "the knowledge of good and evil" was the image of God, we will grant that he is correct. If the Bible said that man was created in Colenso's image (his knowledge

of good and evil), his argument would have more weight, for then there would be a contradiction; but as it is, the passages are as much in union as the two images are distinct.

Let me observe, in concluding my remarks upon Colenso's late work, after having noticed the sole grounds of his rejecting the story of the deluge as told in Genesis, that it was not my intention in commencing to deal with this subject to such a length, but for the sake of Colenso's "plain English scholar," it was thought proper to meet if possible the ill-disposing doctrine of this prominent writer, and to set forth, not in a train of the most difficult words that would puzzle a lexicographer, but in as plain and easy a style as possible, for the benefit and condition of all classes, the fallacy of such reason; and consequently as it has been forwarded by one of the most brilliant and profound scholars of the age, the foolishness and the vanity in undertaking to overthrow the doctrine of the Bible which has stood the shock of centuries, and will continue to stand as long as the wheels of time continue to roll. The history of the deluge certainly should be the last biblical bulwark the enemies of revelation should attempt to destroy, as there is not a nation beneath the skies, from the Greenlander in his sealskin, to the swarthy Patagonian,—from the most enlightened European, to the most barbarous savage, that has not preserved a tradition of that terrible event, and which continues in the mind as a fixed reality up to the present day. Reader, believe the Bible!

PART II.

The place where Noah built the ark cannot now be ascertained. Some suppose that it was built at the town of Joppa, now called Jaffa, on the eastern coast of the Mediterranean sea, but this is only conjectural: the probability is (and which will afterwards appear as a certainty), that it was somewhere in the neighborhood of the junction of the present rivers Tigris and Euphrates, which rivers, in my opinion, were united as one before the flood, and flowed through the district of country now occupied by the Persian Gulf and the straits of Ormuz, emptying its waters into the ocean, which then washed the shore not farther northward than the parallel of 20° . It is very natural to suppose that the timber necessary for the construction of so huge a vessel could not easily be conveyed from a distance, especially in the age of Noah, when mechanical contrivances and advantages were little known; and therefore the presumption is, that the ark was built at the side of some great river, that would not only bear down upon its liquid bosom the weighty material that mayhap could not by other means be conveyed, but would afford by its gradual rise protection to the ark from the tremendous dashing of the waters at the breaking up of the "fountains of the great deep." This was the river on the banks of which flourished the garden of Eden, and along whose shores the descendants of Adam gradually settled, as it is forcible that as Adam and Eve were created and placed upon a river's bank, they and their posterity would ever after desire to fix their habitation in its vicinity.

The kind of wood of which the ark was built is not now definitely known, as the word *gopher* occurs nowhere else in the Scriptures, and cannot with certainty be traced to its root. Bochart, Fuller, and some other critics have maintained that it was the cypress, which is little liable to rot or to take the worm, and which abounded in Assyria, where they supposed Noah to have built the ark. It is known that this wood was anciently used in shipbuilding, and for other purposes, where durability was wanted. The Athenians buried their heroes in coffins of cypress, of which many of the Egyptian mummies were also fabricated. It may have been from this practice that the ancients used the cypress as a token of sorrow, and not that it was employed in the building of the ark. Others again, with Asenarius, Taylor, Munster, &c., think that the pine answers best to the Hebrew word, its relative *gophrit*, signifying sulphur, limestone, &c., no wood producing pitch, tar and turpentine, and other inflammables in such quantities as the pine. The cedar, however, seems the most likely, as it is light and easily worked, and which seems to have at some distant period abounded in that region of country. The word *gopher* is rendered *cedar* in both the Targums (Clarke). The lightest convenient material was what God doubtless directed to be used, not only as advantageous in building, but it would support a greater weight, and one object evidently was to have the ark as small as possible to answer the purpose. We are not to imagine that the sides of the ark were built up of huge sticks of squared timber, but of hewn planks that a few men could adjust at pleasure. The walls were, according to Josephus, supported by cross-beams, which seems plausible, as they would be required to protect the ark from being wrenched by the violence of the waters. We know in our own times

our buildings require to be well braced to prevent them from being prostrated by the winds. The era of the flood was, according to Usher, 2348 B. C. The time of the year when the flood began, is referred by all commentators and critics of Genesis to the autumnal equinox. This they gather from two sources. The first is, that as God commanded Noah to take in of all food that is eaten, which was principally, and perhaps as far as he was concerned, entirely vegetable, it could have been collected at no season but the autumn. The second is, the mentioning of the months, as the second month, the seventh month, and the tenth month, which they consider the several months of the Hebrew year. In Gen. 7:11 we read, "In the sixth hundredth year of Noah's life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened." Now, the second month of the ancient Hebrew year was Marchesvan, which answers to part of October and part of November, and, therefore, it is concluded that the flood began about the middle of September. According to Blair it commenced the seventh of December, and Noah left the ark the 18th of December following. But let me remark here that in my opinion they are all wrong. The first point of their reasoning is granted the assumption that Noah was known to four seasons, as we are now, a position already shown to be untenable; still even allowing them that basis for argument, we cannot see how the animals would succeed on being launched into the depth of winter, as they were, according to their calculation, in the ark a complete solar year, or 365 days. It appears also that Noah descended into the plains as soon as the state of the ground would permit, and, therefore, we enquire how could he maintain himself through the winter

season, when he had very likely but little provision; and what also of the lower animals? The second hypothesis, or rather notion, is equally fallacious, for the time spoken of in Genesis was not reckoned according to the Hebrew year, which I greatly doubt was then in existence, but according to the *year of Noah's life*. (Gen. 7:11). This is seen all through the story. (Gen. 8:4, 5, 13, 14).

Now, this would not have been said if the year had then consisted of twelve months. Moses would have reckoned according to the number of the months in their order in the year. This point has never, to my knowledge, been noticed. Commentators have hurried over the Bible, and in this manner left scores of passages without a word of explanation. I do not ask the reader to believe this, but simply can he help but believe it? But if the year consisted of but three months, as I have asserted, why should Moses speak of the seventh and the tenth months? It is plain that the events of those early days were noted down by the persons that then lived, reckoned from a certain period *in days* just as they "noted down," if we are to credit Josephus, "with great accuracy both the births and deaths of illustrious men." Moses, therefore, writing in a later period, when the seasons were changed, and when time was reckoned on a new system, would naturally change those days into months, that the people for whom he wrote—the Hebrews—might be better able to reckon the time; and no doubt, if he himself had known the time of the year the flood began, he would have recorded it by the day of the month in the Hebrew year. All this is strengthened by the repeated mention of "a hundred and fifty days," a mode of reckoning nowhere else adopted in the Bible. There is, therefore, no grounds for the calculation that the deluge began at the autumnal equinox,

and indeed every point in the earth's orbit was then properly an equinox, as the earth was then a right sphere. Then if that event did take place at the season of the year maintained by commentators, the truth on their part only happened so. Those, however, who may choose to acknowledge the bases of their reasoning upon this point, are of course at liberty to do so; still I wish to state that I am of opinion that the flood was ushered in, rather at or about the vernal equinox, when the earth's axis became inclined to her orbit; and therefore when Noah came out of the ark, after experiencing a beautiful summer on his entering, and a mild winter just before his leaving,—the spring was partly past, when the animals were launched upon the flowery bosom of a fruitful season. Noah was therefore in the ark during the coldest season of the year, but whose severity was modified by a surrounding ocean. The weather was, in all probability, agreeable and pleasant after the cessation of the forty days' rain till the departure from the ark, the heavens being illuminated by a blazing sun looking through, as his mirror, a tranquil and transparent atmosphere. We may infer from Gen. 8:1, that from the time of the embarkation of the mighty troop till the resting of the ark, no winds or storms were permitted to breathe over the smiling bosom of the mighty deep, when God caused "a wind to pass over the earth, and the waters assuaged." This, according to Dr. Clarke, was one of those winds called *samiel*, but the idea is unfounded, as there was nothing in nature to cause it. These winds never blow but over sterile tracts of country, and there was no portion of the earth's surface then above the water. This wind, however, was likely very violent, and was doubtless the equinoctial storm, and was attended probably with sharp flashes of lightning and loud peals of thunder. These were

among the first manifestations, no doubt appalling to all in the ark, of the great and dreadful revolution now taken place in the elements; and the phenomenon seems to have made a lasting impression upon the minds of the aged patriarch and his family, as it was handed down with awe and vivid recollection to their posterity. The psalmist, in his delightful ode, refers to this when he says, "Thou coverest it (the earth) with the deep as with a garment; the waters stood above the mountains. At thy rebuke they fled; at the voice of thy thunder they hasted away. Thou hast set a bound that they may not pass over; that they turn not again to cover the earth." (Ps. 104: 6, 7, 9.)

Many no doubt suppose—indeed the most of readers—that this wind was not at all violent, or the ark would have been foundered, but had it not been a pretty strong wind it would have little availed in subsiding the waters; and it must be remembered that even a heavy gale produces but little agitation upon the surface of running water; and that there was a strong current, we have not the slightest reason to doubt. Even was the land sunken and raised again, as some very strenuously endeavor to maintain, such phenomena would absolutely follow, as they would also in an equal degree if the waters, which is the most probable opinion, were swept or forced over the land. Indeed that there was a very heavy current seems plain, not only from the comparatively short period they were in retreating, but from the words "in going and returning," Gen 8:5 (margin) implying that they were *running* off the earth, or as David has it, *hastening away*, very probably, as would naturally result on account of the hills and valleys beneath in the form of thousands of whirlpools. We therefore see the wisdom, the care, and the goodness of God in causing the ark, doubtless through

the agency of the wind, to rest upon the mountain before the waters began to abate. Dr. Lightfoot, Dr. Adam Clarke, Bagster, and a number of others will have it that the ark did not rest till the 17th of the 7th month *of the flood* (8:4), and therefore that the ark was exposed to the surging of the waters, while assuaging from the end of the hundred and fifty days (7th ult.), till the 17th of the 7th month, which they make out seven days; but it happens that they are all mistaken, for the ark rested not on the 17th of the 7th month of the flood, but rather on the 17th of the 7th month of Noah's life. This, as verse 13 would in itself indicate, must have been the case, for the mountain tops were seen on the first day of the tenth month (verse 5), and if this meant ten months from Noah's entering the ark, the tops of the hills were seen on the 17th of the 11th month in the six hundredth year of Noah's life. Now it was forty days after the appearance of the hills before the raven and the dove were sent out, and fourteen days after that again before the dove was sent out the third and last time, making in all fifty-four days. This would show that the dove left the ark, the last time, on the 13th of the first month in the six hundred and first year of Noah's life, which was likely a day or two before removing the covering of the ark; but we read (8:13) that Noah removed the covering of the ark in his six hundred and first year, the first month the first day of the month. This undeniably shows that the "tenth month" was the tenth month not of the flood but *of Noah's life*.

Some perhaps may imagine, that the forty days should be reckoned from the seventeenth of the seventh month, when the ark rested, and not from the first appearance of land; but this was not intended. It is no way probable that Noah would send out birds, when nothing could be seen but a

world of water ; and we find that from the seventeenth of the seventh month (when the ark rested) till the first day of the tenth month (when the hill tops were seen), seventy-one days had nearly elapsed. Now if the dove was sent out the last time, fifty-four days from the grounding of the ark, she must have been able to get her living sixteen days before the tops of the hills were seen, which is a great improbability ; and how did it happen that she brought in " an olive leaf plucked off," seven days previous to her final departure, and yet when no land was above the surface of the waters ? But even allowing that she fled to some distant land invisible to Noah, it seems quite strange that Noah (before the tops of the hills were seen) immediately after removed the covering of the ark, and looked, and *behold the face of the ground was dry*, verse 13. It is plain, then, that the tenth month cannot mean the tenth month of the flood, and therefore must denote the tenth month of Noah's life. Indeed, if the seventh was thus reckoned, why not the tenth ? and of the former, Josephus says that " the waters began to abate after one hundred and fifty days (which was five months after the flood commenced)"; " that is" he continues " on the seventeenth day of the seventh month." It is true it is not said in the text, that this was the *seventh* or the *tenth* month of Noah's life, yet the writer plainly indicated that this was intended, for he makes mention to this effect at the very commencement, verse 11. In verse 13, chap. 8, nothing is said of the first month, there mentioned, being *of Noah's life*, still this is the meaning to be attached to it, for his age is in conjunction with it ; and in verse 14, only the day and the month are mentioned, yet it can only be understood as referring to Noah's life.

We therefore conclude from these facts, that the ark rested upon Ararat when the waters were at their greatest

height, that is, at the end of the hundred and fifty days, or in other words, on the seventeenth of the seventh month of Noah's life. The able writers referred to, we see have an erroneous view in advocating that the forty days are not to be included in the hundred and fifty. From the circumstance of the ark grounding at the end of the hundred and fifty days, we perceive plainly that the ark drew exactly fifteen cubits of water; (not eleven, as Dr. Lightfoot endeavored to determine,) for so high they reached above the summits of the mountains, 7:20. This is how Noah knew that the waters prevailed fifteen cubits upward, by measuring the depth the ark was in the water when it grounded. Infidels, therefore, need no longer cavil at this passage, and ask how did Noah know how high the waters prevailed (?) as he had nothing wherewith to measure. We can now reply that common sense told him, which, if the infidel possessed, he would not have hooted at the fact. As I before said, give the Bible its right force, and it will force its rights.

The particular mountain on which the ark rested is not decided among the great writers of the age. It is generally concluded, however, that it rested upon the mountain generally known as "the finger mountain," called by the Turks *Agridah*, and is the place at which Russia, Persia, and Turkey now meet; while others urge that it was upon a mountain to the east of the plain of Shinar, an opinion which owes its origin chiefly to the phraseology of Gen. 11:2, which is supposed to denote that the place where the ark rested was east of the plain of Shinar, whereas the Ararat of Armenia is west of it. This, however, seems a narrow foundation for argument, as the words "from the east," as in our common version, is not admitted among many as a correct interpretation. It is written in the margin "east-

ward," which, if correct, will not admit the latter opinion. "The name Ararat," says Sears, "is said to be derived from *Arai*, a king who lived 1750 years B. C. He fell in battle in an Armenian plain, which was hence called "*Arai, Arat*,"—*the fall of Arai*. Before him reigned *Amassis*, the sixth from Japhet, who called the country *Amasia*; hence the name *Massis* or *Macis*, by which alone Armenians in the present day know the mountain.

There are two mountains called Ararat,—the Great Ararat on the northwest, and the Lesser Ararat on the southeast,—their summits being seven miles apart. The summit of the Great Ararat is 17,323 feet above the level of the sea, or about three and a-quarter miles; and 14,320 feet, or about two and three-quarter miles, above the plain of the Araxes. The northwest slope of this mountain is about fourteen miles in length, and the southeastern about twenty. The summit, for about three miles, in an oblique direction downward, is covered with perpetual ice and snow. It has long been believed in ancient, as in modern, times, that the remains of the ark were still upon this mountain (see Josephus, *Antiq. b. i., ch. iii.*; also, *b. xx., ch. ii., sec. 3*); but travellers of late, who have been upon the spot, have put an end to the opinion. Many attempts had been made to reach the top of Ararat, but few had succeeded in getting beyond the limit of perpetual snow. Professor Parrot, a German, in the employ of Russia, was the first who reached the summit, October 9, 1829, (mayhap the first bird that returned since Noah's departure,) which he describes to be a "gently-vaulted, nearly cruciform, surface of about two hundred paces in circuit," without a rock or stone to interrupt its continuity. This stepping-stone of Noah, from the old into the new world, presents the most imposing appearance to the eastern

traveller. "It appeared," says Ker Porter, "as if the largest mountains of the world had been piled upon each other to form this one sublime immensity of earth, and rocks, and snow." "Nothing," says Morier, "can be more beautiful than its shape, more awful than its height. All the surrounding mountains sink into insignificance when compared to it. It is perfect in all its parts; no hard rugged feature, no unnatural prominences; every thing is in harmony; and all combine to render it one of the sublimest objects in nature." Since the ascent of Dr. Parrot, Ararat has been the scene of a frightful calamity. On July 2nd, 1840, just before sunset, an eruption took place, which destroyed the monastery and chapel of St. James, the village of Arguri, and devastating the surrounding country, where rock, ice, and snow were hurled with tremendous fury.

It was certainly upon the top of this mountain that the ark rested. Porter, however, thought that neither of these "inaccessible summits have ever been trodden since the days of Noah, if even then; for my idea is," he continues, "that the ark rested in the space between these heads, and not on the top of either." A number of later writers have issued a similar opinion. "The difficulty of descent," says Sears, "and the low temperature of the atmosphere, which must have killed many of the animals, alike preclude the supposition" that the ark rested upon the top of Ararat. Some, among the most noted geologists, acquiesce in this notion. We are, nevertheless, quite unwilling to credit such statements, inasmuch as they are confusing in the face of the Scriptures, and, we might with propriety add, contradictory to its sentiments. It would be a glorious notion to sacrifice the Bible at the shrine of mere thread-bare opinions. If we allow that the ark rested somewhere in the region of Ararat,

—a fact that has never as yet been disproved,—we cannot, with Porter, acknowledge that it rested between the two heads, as we would be denying the deluge that depth of water necessary to inundate that tract of country, for if there had been enough water to float the ark even half-way up the side of the Great Ararat, it would have been there attracted by that body, and, consequently, would have rested upon its slope. But it could have rested on neither its side nor the plain. If we are to believe the Bible, there was not a particle of dry land visible to Noah when the flood was at its acme, *i. e.*, at the end of the hundred and fifty days; for it is not only said that first all the hills were covered and afterwards the mountains, but that the tops of the mountains were invisible till the tenth month; or rather, that they did not till then peep above the surface. I see not the slightest foundation, ignorance only excepted, for the above assertions. Now the fact that the summit of Ararat is at the present day in the region of perpetual frost, affords no reason that it was always so. If the earth, before the flood, stood with her axis at right angles to the plane of its orbit before, and consequently at the time of the flood, its summit was not then above the line of perpetual congelation. I say that the earth inclined at the time of the flood; still we are not to suppose that this ponderous sphere was then under a rapid motion from south to north, but rather having an almost imperceptible movement in that direction, only perceived by its long continuation, and which ceased not till the descent of Noah with his little world of animals into the plains, where he offered up sacrifice before the change of climate was felt in that region of country.

Also, as Ararat is volcanic, the possibility is that it may have been less elevated than now, when the ark rested,

probably being destitute of the cone which now crowns it, and presenting an extensive plain upon the summit. The difficulty in its descent, likewise, should never be mooted by a thoughtful man as an objection to the ark's ever having rested there, since it must, necessarily, have undergone very many changes since that period, both through internal and external agencies. If eruptions have taken place in recent times why might they not have occurred in early times, and as for the atmosphere, its operations are continuous. It is, notwithstanding, a certainty that this mountain, upon which the ark rested, was higher than any other in the circumjacent country, for it appears from Gen. 8:5, and Josephus (*Antiq. b. i., ch. 8, sec. 4*), that its top was above the water long before the appearance of any other elevation; and it is philosophical that if all those lofty pinnacles were submerged, as the Bible most emphatically teaches, the ark would float around or towards that which contained the greatest quantity of matter, in the same way as floating bodies in the ocean accumulate upon shoals and islands. If two pieces of wood be placed upon the water they will in a short time come together. The circumstance of Noah measuring the height to which the waters prevailed from the top of Ararat, clearly shows that it was the highest mountain. About eighty miles east of Erivan stands the city of Nakhichevan, which signifies *the first place of descent*, from the tradition that Noah fixed his residence here after descending from the mountain, and claims the honor of being *the oldest city in the world*.

The quantity of water requisite to cause such a catastrophe as the deluge of Noah, has been, between Christians and infidels, a subject of continued wrangling. The latter have long since denied the possibility of there ever having taken place such an event, on the grounds that there is not a suffi-

ciency of water upon our planet to raise the ocean to the height indicated in the Scriptures. The former, therefore, being unable in their age of knowledge to meet such apparently formidable arguments, have had recourse to the most singular inventions and laughable notions. Some, in their great attachment for scriptural truth, have, for the purpose, borrowed waters from the moon, while others have moved the earth through the tail of a comet.

Mr. Whiston, in particular, referred the deluge of Noah to the proximity of the great comet of 1680. "His opinion was," to borrow the words of Dr. Dick, "that the earth, in passing through the atmosphere of the comet, attracted from it a great part of the water of the flood; that the nearness of the comet raised a great tide in the subterranean waters; that this could not be done without making fissures or cracks in the outer crust of the earth; that through these fissures, the subterraneous waters were forced; that along with the water much slime or mud would rise, which, after the subsiding of the water, partly into the fissures, and partly into the lower parts of the earth to form the sea, would cover over, to a considerable depth, the antediluvian earth; and thus he accounts for trees and bones of animals being found at great depths in the earth. The same comet, he supposed, when coming near the earth, after being heated to an immense degree in its perihelion, would be the instrumental cause of that great catastrophe, the general conflagration." Others, again, wiser than the rest, have asserted the probability of the atmosphere being converted into water,—a notion to which Dr. Clarke apparently clung,—for it is chemically ascertained, we find the Doctor saying, "that water itself is composed of two airs, *oxygen* and *hydrogen*; and that eighty-five parts of the first, and fifteen of the last, making 100 in the whole, will

produce exactly 100 parts of water." Geologists, again, have handled the difficulty on the supposition that the land gradually sunk, and that the waters rushed into the cavity formed by the depression,—an hypothesis, of course, concomitant of the argument of a partial deluge. This, they suppose, confirmed by the fact that there is an extensive range of country in the western part of the Asiatic continent, adjacent to the mountain upon which the ark rested, that is considerably below the level of the ocean. Examples of islands and whole districts of country having in the past, gradually and even suddenly settled, have likewise been summoned as illustrative of the fact, while elevations of other parts on the same principle are called to the question. "While we have," to use the words of an eminent geologist, "no evidence whatever, that the sea level has changed, during, at least, the ages of the tertiary formations, and absolutely know that it could not have varied more than a few yards, or at most a few fathoms, we have direct evidence that during that time, great mountain chains, many thousand feet in height, such as the Alps, have arisen from the bottom of the ocean, and that great continents have sunk beneath it and disappeared. The larger parts of northern Europe and America have been covered by the sea since our present group of shells began to exist; and it seems not improbable that the lower portion of the valley of the Jordan was depressed to its present low level of thirteen hundred feet below the level of the Mediterranean, since the times of the deluge. On several parts of the coast of Britain and Ireland the voyager can look down through the clear sea in depths to which the tide never falls, on the remains of submerged forests; and it is a demonstrable fact that even during the present age there are certain extensive tracts of land which have sunk beneath the sea level, while certain other extensive

tracts have been elevated over it. In 1819 a wide expanse of country in the delta of the Indus, containing fully two thousand square miles of flat meadow, was converted by a sudden depression of the land, accompanied by an earthquake, into an inland sea; and the tower of a small fort, which occupied nearly the middle of the sunken area, and on which many of the inhabitants of a neighboring village succeeded in saving themselves, may still be seen raising its shattered head over the surface, the only object visible in a waste of waters, of which the eye fails to determine the extent. About three years after this event, a tract of country, interposed between the foot of the Andes, and the Pacific, more than equal in area to all Great Britain, was elevated from two to seven feet over its former level, and rocks laid bare in the sea, which pilots and fishermen of the coast had never before seen.

* * * * In like manner, the sea appears to be receding from the northeastern shores of Sweden at the rate of nearly four vertical feet in the century; while it seems to be advancing on the western coasts of Greenland at apparently a rate more considerable, though there the ratio of its rise has not been marked with equal care. It seems to be rising on even the Swedish province of Scania; while all the time, however, the actual motion—upwards in one region, downwards in another—is in the solid earth, not in the unstable water, which merely serves as a sort of hydrostatic level to indicate this fact of subsidence or elevation in the land.”

Such are the opinions and arguments of the great men of modern days. Let me, however, remark, in passing, that some, at all events, are unworthy of having a place above an absurdity, and have been long since thus considered. The descent of water from the moon to accommodate the earth with a deluge only needs to be mentioned that it may be

condemned. The only question that presents itself is, how did they get back again (?) We will find that each theory is the result of that science which the proposer held in the greatest esteem, and which ranked among all others as his particular favorite. We find this to have been the case with the astronomer and the geologist, and we acknowledge that supremacy is due to the latter. Whiston's notion is truly remarkable. The idea is singular and characteristic of a peculiar mind—it is low enough to be conceived as a *possibility*, yet soars far above the head of credence and takes a circle far outside the limits of probability, as the march of science condemns all such phantasmagoria. No firebrand that Satan could snatch from his little dwelling would be more effectual in roasting the surface of our planet than such a proximity of a comet “shaking from its horrid hair” the flaming element. We must get a stool with longer legs than this to stand above the infidel in point of argument. The possibility of the atmosphere being resolved into the aqueous state to inundate the earth's surface is correct to a certain extent in a scientific point of view, but in the face of the Divine record of the flood is a complete fabrication. How could Noah and his kingly retinue have lived then? What acted as a wind as referred to? How did the raven go to and fro, if there was no air to support its wings? In short, the idea is ridiculous. But what shall we say of the arguments of the geologist? They answer very well. But let me inquire, what do all these recited facts—facts that are known as genuine—argue? Nothing more than the repeated operations and power of a force seated in the bowels of this terrene fabric. Volcanic eruptions, the record of which the histories of nearly all nations are gorged, are sister results, and take place through the move-

ment of this latent force, and were doubtless the great agent in ushering in that terrible cataclysm, the general deluge, as *the breaking up of the fountains of the great deep* evidently determines. To give an additional idea of the violence of this internal power to those among the common class of readers, for whom in particular this book has been written, I will quote from the *Epitome of Geography* a relation of volcanic phenomena, which is there represented more clearly than any words of mine, in the following: "Volcanoes consist of the eruption of smoke, ashes, flame, melted stones called lava, sometimes of water and mud from the earth. This usually takes place from the top of a mountain generally of a sugar loaf form, which contains a hollow basin called a crater or cup. The eruption, however, sometimes takes place from the bottom of the sea, and forms islands, and sometimes from level plains. One remarkable instance of eruptions of the latter kind took place in a plain among the mountains of Mexico, in North America. After fifty or sixty days of subterranean thunderings and earthquakes, which subsided for a short time, and then recommenced on the night of September 28th, 1759, an area, consisting of a fertile plain, well cultivated, of four square miles, rose up like an enormous bladder to the height of above 500 feet. Thousands of small burning cones burst out from six to eight feet high, and poured out scorïæ and ashes in such quantity as to raise six great mountain masses to a height varying from 300 to 1,690 feet above the former plain. The most elevated of them is called the Volcan de Jorulla, which is perpetually burning. Volcanic craters, however, are more frequently found on the summits of mountains. There are many craters of volcanoes existing, which have been extinct from a period anterior to human records; while on the other hand, some have broken out within

the memory of man, and some, for ages extinct, have broken out afresh. The projectile power of volcanoes is very great. Vesuvius, in Italy, has projected large stones to a height of 3,600 feet above its summit; and Cotopaxi, in South America, was ascertained to have hurled a rock, calculated to weigh 200 tons, to a distance of more than ten English miles. Their effects are sometimes very extensively felt. Earthquakes, caused by the eruption of Tomboro, in the island of Sumbawa, near the island of Java, were felt over a circle of 2,000 miles in diameter. In Sumbawa it was attended with a whirlwind of surprising fury, which lasted an hour, sweeping houses and trees before it. The explosions commenced on the ceasing of the whirlwind, and were heard in a circle with a diameter of 1,700 miles. Sometimes they are destructive and desolating. In the eruption of Tomboro, just mentioned, upwards of 12,000 persons perished. By the eruption of Vesuvius, A. D. 79, the two towns of Herculaneum and Pompeii were destroyed; the one by lava, the other by ashes. From an eruption of Mount Hecla, in Iceland, that island never recovered; for in two years it lost 9,336 persons, 11,400 head of cattle, 28,000 horses, and 190,000 sheep, in consequence of the eruption. The extent of the principal stream of lava is fifty miles in length, its greatest breadth being from twelve to fifteen miles. In the plains its general depth is 100 feet, but in the channel of a river, which it dried up, it is 600 feet in perpendicular depth.

“Earthquakes form another class of the effects produced by the fire which burns in the interior of the earth, and are usually connected with volcanic eruptions. Their effects have often been most calamitous. In 1692 the city of Port Royal, in Jamaica, with a tract of adjacent land of 1,000 acres, sunk in one minute into the sea. In 1750, the city of

Conception, in Chili, disappeared during an earthquake, and the sea rolled over it. In 1755, Lisbon, in Portugal, was nearly destroyed by an earthquake. The New Mole, to which multitudes had fled as to a place of safety, suddenly sunk into a hideous abyss, not one body floated to the surface, nor were any of the fragments of the vessels that were sucked into the chasm ever found : and on that spot there are now 100 fathoms (600 feet) of water. In this awful convulsion about 60,000 persons perished in about six minutes. A violent shock threw down the greater part of the city ; the sea retired, but suddenly returned in a wave fifty feet high, and rolled over the ruins. The shocks were felt not only over a great part of Europe, but in northern Africa, and even in the West Indies. Several lakes in Scotland repeatedly rose and fell on that day. In 1772, a lofty volcanic mountain in the island of Java disappeared, and an area around it of fifteen miles by six was swallowed up. In 1812, the city of Caraccas, in South America, at one shock buried 10,000 of its inhabitants under its ruins."

It is plain therefore from these comparatively inferior incidents that the forces seated in the bowels of the earth, and which are only kept in bonds by the Almighty hand, are sufficient, if let loose, to destroy and convert to horrible ruin every foot of dry land upon the surface of this planet, and that too in but a moment of time. That God has used this as an instrument in executing his purposes of vengeance upon the wicked cannot be considered, as problematical, particularly in the case of Sodom and Gomorrah ; and if he employed it in one instance, why not in another ? Indeed that there was an agent of this nature that spread the deluge upon the earth is most certain, or what caused the forty days' rain ? If it did not rain before the flood, as we have already

shown, what would now cause it especially a constant pour of forty days and nights? What kept it up for such a lengthy period, and at the same time changed the constitution of earth? Was there not something that supplied the atmosphere with vapor? If there was not, the infidel has the argument. There was certainly some power in action? Now what was it? What could it have been but an acting force in the great deep to break up her fountains. It is here we are to look for the agent in the hand of God that swept the world with a liquid broom, and poured its ten thousand thunders upon the guilty heads of the vile antediluvians. If we but imagine a subaqueous chain of volcanoes in the Indian ocean, extending along the southern part of the eastern hemisphere about one or two hundred miles from the coast, and these all spouting their liquid venom through the angry sea, we will no longer be at a loss to conceive how this terrible day of wrath was ushered in. Granting this, what would unavoidably happen? The internal action in the bed of the ocean would cause the sea to run in liquid mountain ranges against the shore and sweep over the highest elevations,—sending through the purple air a spray that would in a short time saturate the entire atmosphere. The southern borders of the continents, if not of solid rock, would be swept before the raging element, and scattered in extensive beds upon the surface of the far interior. That part of the shore destitute of the rocky consistence would be gullied out to give way to a gulf or bay; while the hardy, massive coast-line would successfully brave the watery charge, to afterwards remain a peninsula or headland, stretched out into the deep blue sea. Providing the water swept proudly on till it became so accumulated upon the shore as to spread over the whole expanse of country interposed between the northern and southern oceans, the

northern part of the continents would afterwards naturally be low and sloping toward the north, and extending into the sea in the form of a shoal all along upon the Arctic coast, while little sandy islands would be here and there formed between the resultant currents as they poured out into the northern basin. Large rivers flowing in a northerly direction, affording a more easy passage for the running tide than the irregular surface of the country, would be gradually widened, and their mouths would afterwards be proportionally large, occasioned by the waters there accumulating on entering the sea. After the cessation of the acting forces, the earthy sediment in the water would settle upon the overflowed land, especially if mountainous, and form a fruitful soil upon the surface after the entire disappearance of the waters. All these phenomena would naturally be the result of such a catastrophe. And this, if found, would of course plainly indicate such a cause. If the reader will now get his atlas, and look at the map of the world, particularly that of the Old World, he will there be able to trace a similar outline as I have just given. The southern coasts of the three great continents are found to be bold and rocky, and the peninsulas consisting chiefly of ranges of mountain rock running in a southerly direction and stretching their flinty heads far out into the sea. That part of the coast destitute of mountains will be seen gullied out where the arms of the sea now remain, as the Red Sea, the Persian Gulf, the Bay of Bengal, &c. As he casts his eye over the surface of the three old continents, he will there see spread out upon the surface great tracts of burning sand and saline deserts, destitute of forests and bare of mould or verdure. These continents also, particularly Asia, slope gently towards the north, as we learn by the immense rivers that flow in that direction, and fall into

the icy sea terminating in a triangular sheet of water apparently of its own creation, while all along upon the northern shore may be seen little islands dotting the northern margin. Hence I conceive that there must have taken place at some epoch in the past history of our globe a cataclysm that bore the same characteristic features as that just described, and which must have had its origin in volcanic violence in the bed of the southern ocean. If not, I humbly acknowledge that I have not the faintest idea of the cause of the above phenomenon, as exhibited in the continents of the eastern hemisphere. Had there not taken place such an event, I would have expected these great terrestrial divisions to present a converse phenomenon, especially in the peninsulas which should point toward the north as a result of the long continued action of the polar currents. Nowhere can we look at the Old World without some distinct trace in its physical aspect of a violent rush of waters that appears to have swept the surface from south to north. The configuration of the islands to the south of India, and the direction of the mountain ranges from east to west, while the principal American chains run north and south, with other prominent and peculiar features, tell a striking story of such an event in bygone ages. Indeed the old continents appear to have undergone a most striking change of this nature since the final organization of our world, on the third day of the Mosaic creation; while the New World still bears a close relation to a different and more ancient system. This is a fact that geology itself most satisfactorily proves. "Let me here remind you in the passing," says Miller in his *Palæontological History of Animals*, "that that antiquity of type which characterizes the recent productions of North America is one of many wonders—not absolutely geological in themselves, but which, save for the

revelations of geology, would have forever remained unnoted and unknown—which have been pressed during the last half century, on the notice of naturalists.” “It is a circumstance quite extraordinary and unexpected,” says Agassiz, in his profoundly interesting work on Lake Superior, “that the fossil plants of the Tertiary beds of Oeningen resemble more closely the trees and shrubs which grow at present in the eastern parts of North America than those of any other parts of the world; thus allowing us to express correctly the difference between the opposite coasts of Europe and America, by saying that the present eastern American flora, and I may add the fauna also, have a more ancient character than those of Europe. The plants, especially the trees and shrubs, growing in our days in the United States, are, as it were old-fashioned; and the characteristic genera *lagomys*, *chelydra*, and the large salamanders with permanent gills, that remind us of the fossils of Oeningen, are at least equally so;—they bear the marks of former ages.” How strange a fact! Not only are we accustomed to speak of the eastern continents as the Old World, in contradistinction to the great continent of the west, but to speak also of the world before the flood as the Old World, in contradistinction to the postdiluvian world which succeeded it. And yet equally, if we receive the term in either of its acceptations, is America an older world still,—an older world than that of the eastern continents.”

Now the reader is requested to weigh carefully the foregoing facts, and then will not the presumption force itself upon the mind that the Old World was in point of geology recently overwhelmed by the waters of a deluge, while the New World remained unaffected in its physical fashion without change, save in temperature and climate? What in the same unsuspended creation and limited geological period

would cause those hemispheres to differ so materially? Nothing less at all events than such a vehement rushing of waters over the eastern continents could have spread such wide tracts of sand and gravel that now occupy a great part of the interior of Asia and Africa. And would any one assert that these were there in the days of Adam? Did not God make our earth perfect for the abode of a morally perfect being and for the happiness of his creatures, that they might multiply, inhabit and enjoy it? Geology appears quite plainly to show that the Sahara has been in the light of geology but recently deposited. By the experiments of the French savans, who accompanied Bonaparte in his expedition to Egypt, it was found that the first deposit in the valley of the Nile was laid not earlier than a hundred and fifty-nine years after the era of the creation, according to Usher, and which is immediately upon the sands of the Sahara. These sands are laid again upon some of the later strata of the Tertiary division. Now how could this ocean be thus adjusted? Indeed I know of no cause to which we might refer it with a greater degree of certainty than to the deluge of Noah, and which seems strengthened by its lying upon forests of dicotyledonous trees. Had it been the bottom of a now dried up sea, there would certainly be some indications to this effect in itself and in the formation of the surrounding countries, and what seems to militate against such a view is, in particular, the fruitfulness of the Barbary States of the north; and it is plain that we can hardly refer its rise to a special volcanic agency, as no trace of such phenomena has ever yet been discovered upon that continent. The Sahara appears to be the greatest link in a chain of deserts which, though broken, extends from the western coast of Africa to the eastern coast of Asia; and what seems very remarkable is,



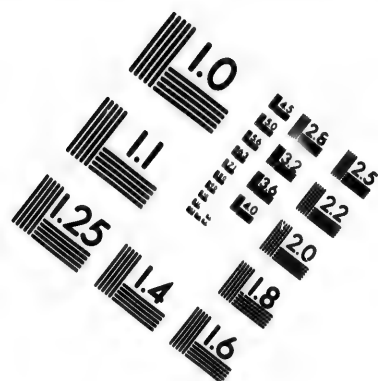
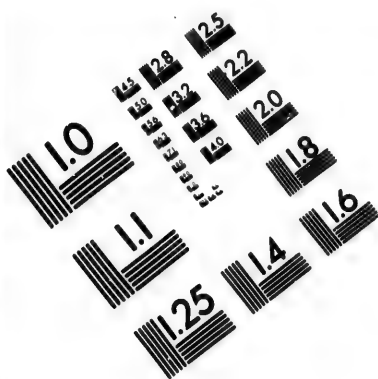
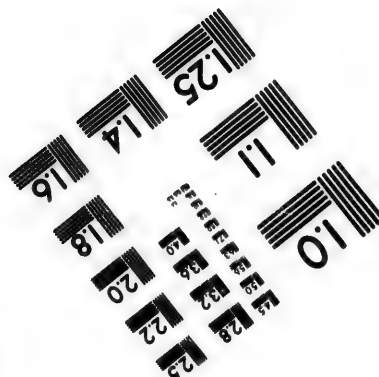
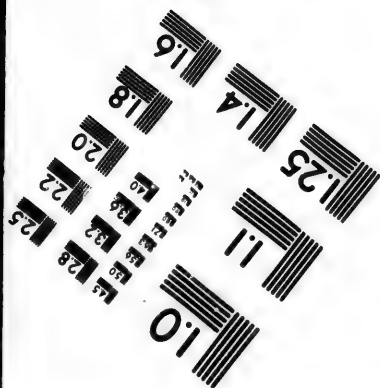
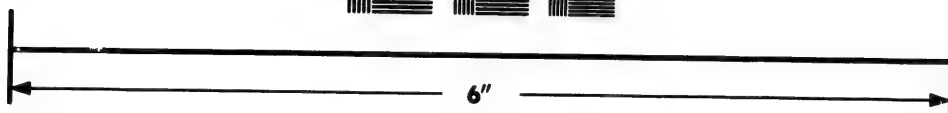
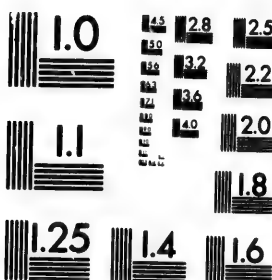


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that all appear to be of sand that has been there forced by some great rushing of the ocean towards the north, not only on account of their lying upon a recent geological formation, but they are located at about the same distance from the shore of the southern waters. Those extensive saline deserts appear to me, however unwise the opinion may appear in the eyes of the geologist, to be the remains of large accumulated bodies of salt water, that have dried up through evaporation, as the earth dried two months, according to the Scriptures, before Noah left the ark, leaving the saline substance behind. There are indeed many valleys of salt in the eastern hemisphere, where there is little or no sand deposited. I conclude therefore, that this extensive range of sand was carried at the time of the deluge, from the shores of the southern ocean, by the violence of the waters rushing towards the north, with which I identify the deluge of Noah, and there deposited after the force of the water had sufficiently decreased by the opposing obstacles to allow its deposition. This, we add also, appears plausible from the fact that each of those great deserts principally corresponds to a gulf or bay on the south of the continent. The oases of the Sahara caused by boiling springs from the bottom of the desert, appear to be formed of the antediluvian soil, which is carried and spread upon the surface, and are, notwithstanding, the influence of the surrounding desert, among the richest parts of the earth, supporting powerful tribes of the natives.

The idea that the fountains of the great deep were nothing more than the oozing of subterraneous waters through fissures or cracks in the earth's crust, as was taught by Woodward, Burnet, Clarke, and others, has now no place in composition, except for its oddity, or being the creation of distinguished men. And it may be remarked, that had this water

not been salt, the reservoirs would hardly have been called "fountains of the great deep," as the Hebrews well knew that the waters of the great deep were salt. Indeed, there is no theory of the origin of those fountains, that has ever been able to bear the eye of criticism, except that which identifies them with a rush of waters from the southern ocean.

Now let this be granted; and let us see whether or not the effects of such an occurrence will correspond with the phenomena, in connection with the deluge of Noah. Suppose the volcanic forces have begun to play in the bed of the austral deep, and that the waters begin to rush upon and over the dry land, what would be the result? The atmosphere, though never before the source of rain, would now be so saturated and overloaded with the rising mist and spray, as to pour upon the earth an overwhelming torrent, and which would continue as long as the fountains continued in action. Noah would presently see belching from the south an angry world of waters, hurrying towards the ark, while an odd drop of rain would stroke the roof of his vessel, reminding of the words of the Almighty, that it should rain forty days and forty nights; and in a few moments nothing could be seen but a surrounding haze. It is very likely that the fountains were broken up several days before Noah entered the ark, and only just reached that quarter when "the Lord shut him in"; and for anything I know, the tremendous agitation, though distant, may have caused a terrifying rumbling and influence in the atmosphere, as to excite alarm among the animals in the distant forests, so that they required, if I may so speak, little urging to fly to a region they would be disposed to imagine a place of safety. The falling rain itself would be alarming, if never before witnessed. As the rain

continues, and the flood rapidly increases, in a few minutes the ark is riding along, though there is no wind, upon the running tide, towards the north; a phenomenon exactly in harmony with the teaching of the Scriptures. All animal life that moves is now swallowed up in the angry element, and their carcasses move on in the same direction, though of course not so speedily, owing to whirlpools created among the numerous mountains. Those, however, inhabiting that part through which the principal and uninterrupted stream flowed, would be hurried on to higher latitudes, and deposited when the force of the waters had sufficiently abated. Hence we find in the present day in Siberia great masses of accumulated animal remains, which, both in quantity and condition, indicate that they could not have been thus piled together in such surprising numbers, had they died a natural and not a violent death. The remains of a single species of elephant (*elephas primigenius*) are so abundant in the icy regions of Siberia, that what have been termed "ivory quarries" have been wrought among their bones, for upwards of a century; and this same species was, during the Pleistocene deposits, a native of Britain, and other lower latitudes. In short, we cannot refer such facts to anything but the deluge of Noah. In carrying out the illustration, suppose that the waters have now subsided, and that on a certain day they have disappeared from the face of the ground, would Noah be wise to descend immediately from the ark? Surely not, for he well knew, probably from the muddy appearance of the waters during the flood, that there would be a depth of new soil upon the surface, that would require exposure to the sun, before accessible to the animal foot, and, accordingly, we find that he waited forty days after the disappearance of the waters, before his descent from the ark. Josephus affirms

that when the dove returned with the olive branch, she was *covered with mud*, which no doubt had collected upon the tops of the trees.

The question, whether the deluge was partial or universal, was long a disputed point between the geologist and theologian, but the world of late appears to have settled down with the opinion that the geologist is entitled to the palm of victory. That the deluge was partial, as regards the earth's surface, we with the current belief acknowledge, still we are not content with the very unphilosophical conclusion that it extended over but a small part of the Asiatic continent; we are confident it submerged all the dry land of the three old continents. I cannot see how geologists acknowledge that the deluge was caused by a rush of waters from the Indian ocean, when they are unwilling to refer the movement of a bone or shell to that event, and at the same time argue that the flood prevailed as far northward as the Caspian sea. But if the waters came under a rapid motion, as the breaking up of the fountains of the great deep evidently determines (sec Job 38), and in sufficient quantity to raise the waters fifteen cubits above the highest mountain, it most certainly must have required a miracle, even did the land sink as they suppose, (for it is only supposition,) to prevent them from spreading over the entire continent. But this of course could not be admitted by them, or it would have destroyed their principal point of argument, against an universal deluge, and they chose, therefore, to swim over, if possible, the inconsistency, and fall in with the eager anatomist, who they knew well could very easily create a number of species of animals, throughout that region, that would be too great to have a lodging in the ark; and in this they were not disappointed, for the anatomist*, like the astronomer and the geologist,

* See Bovell's Outlines of Natural Theology, chap. 2: page 563.

has stretched his favorite scientific cords to a greater length than the truth will admit. Two animals, which would be considered as identical by a common observer, might be regarded as quite different by the anatomist, when he came to apply his rule of test, founded on the comparative length and size of the limbs, the shape of the skull, the fashion of the trunk, the number of the teeth, the thickness and texture of the coat, and other trifling points of non-correspondence, and thus add species to species, when they at the same time are as nearly allied as the Mongolian and European, and in many instances more so. If our earth has undergone a great change in respect to fruitfulness and climate, of which we have abundant proof, and that too since the creation of the animal species, it is forcible that they would undergo a change not less remarkable, and which would likely act differently on each individual, to be afterwards increased by different climates, habits and modes of life; and hence those distinct species of animals, that lived in America at the time of the deluge, must have been broken up into a number of anatomical species, according to the present stage of that science, and continued to become more and more complicate, as centuries rolled on. But, without reflecting further upon the anatomist, as his numbers, enormous as they are, afford little objection to our views, let us take into consideration that great point of argument—the diversity of climate—which Mr. Miller and others have so ardently and confidently handled, as confounding to the argument of an universal deluge,—universal, for instance, as regards the three eastern continents. The illustrious writer introduces his formidable objection in this fashion: he first shows that every species of animal (and he reckons no small number), has its own peculiar district, and therefore, could not live if taken from its own climate,

as he thinks most of them must have been, if they were taken into the ark ; and, he further argues, that it would be an impossibility for many of the distant animals to get there, as they could not perform such a journey ; while, on the other hand, the bulky quadrupeds that *could* possibly perform the route, would be prevented by intervening obstacles, such as rivers, lakes, mountains, and deserts. This, however, though decisive against the argument of an universal deluge, has no weight against the opinion of an universal flood, as regards Europe, Asia, and Africa, unless it can be shown that in the antediluvian times each animal species had its peculiar region of country, and was not generally found over the three great continents, or at least did not inhabit that district of country where Noah resided. If we look to geology, we will find that the ancient animals were, not to say confined to a certain region of country, but rather to a certain great body of land. We are not to imagine that the Creator produced the pristine animals of their respective races in the very part of the continent in which they are now found, but somewhere or anywhere on that continent from whence they moved, and probably never returned. It appears, that wherever there was a considerable body of land capable of sustaining inhabitants, and separated from any habitable body by water, animals were there created ; but it is in no way probable that they would be specially created for a region of country to which animals of another might, with little inconvenience, migrate. Hence, it is plausible that all those species of animals now found in Europe, Asia, and Africa, radiated from a common centre, probably, from the country of Eden, as they all could have lived there before the deluge, when there was no changing seasons,—the place, no doubt, above all others, God would delight in first seating the noblest crea-

ture of his hands. This, therefore, may be with propriety considered as no objection to the argument of such an extent of the deluge—some of each species of animal inhabiting the three continents, being somewhere near the place where Noah built the ark. And it must be remembered, that we have no reason to believe that God created any more of each species of the lower orders, than of the human,—a male and a female; and as they were, doubtless, created in the vicinity of Eden, they could not have multiplied and spread over the three continents before the flood; at all events, it is not likely they all or any of them migrated from that country before the time of Noah; but even suppose some of them to have been a hundred miles distant, that God that directed Noah to build the ark to save them, could easily have directed and guided them to it. Indeed, this must have been the case, even was the deluge as limited as the geologist has striven to determine.

But a deluge, as extensive as the three continents, and which were before that event but strictly one, the geologist is not content with. It interferes too much with his *strata*, and therefore, has a tendency to frustrate many of his conclusions. Mr. Miller appears to have been somewhat concerned about *the ivory quarries in Siberia*. He, indeed, well knew that the presumption is, that those vast collections of animal remains were there deposited by some sudden outbreak of overwhelming waters, still he manages to smooth the difficulty, though quite indirectly, to take off a little of the keen edge that threatened to sever his argument. He makes out that these remains of elephants belonged to a species that inhabited a cold climate, and therefore seized the conclusion that they could not have been collected there by the deluge. That this species was not adapted to a warm climate he urges from the fact that in the year 1803

a mammoth carcass of one of these animals was discovered frozen up in the ice on the northern coast of Siberia, and which was covered with long hair and a thick crisp undergrowth of wool about three inches in length; "certainly," he remarks, "not an intertropical provision." But what has that to do with the argument? The object was not to show that this animal was a native of the intertropical countries, but that the number of its skeletons could not have been thus adjusted had they died naturally. It matters not, as far as that point is concerned, whether they were or were not natives of a cold climate, for in either case the result would have been the same. That this animal so well preserved was a native of Siberia we do not deny, still we do not see why even the same species might not have extended even to the equator, for the hair on any quadruped will increase in thickness in proportion to the severity of the climate, even was it not inured to such a low temperature. We know, for instance, that the coat of our domesticated animals is generally in proportion to the severity of the winter. Mr. Miller has certainly not decided the question. But is it probable that this carcass was preserved since the days of Noah? Mr. Miller, it appears, did not think so. Well then, to carry out his idea, suppose it to have lived long after the deluge, might it not have lived in a rigid climate when those of the same species, now locked up in the frozen wastes of Siberia, might have lived within the tropics? for we most confidently challenge any one to show that they were postdiluvian animals; and to say their coats were identical, would be no better reason than to say, because Park died in Africa, his hair must have been identical with the wool of the negro. The fact of the matter seems to be this: if our earth was cursed with a flood, we are not bound to suppose that

there was no loss sustained in the animal creation: no doubt some of the animal species then became extinct, as for instance the mastodon; and it seems plain, by this specimen of mammoth being carried towards the south, and thrown upon the northern coast of Siberia, that it had been carried far into the icy sea by the waters of the flood, and was there preserved in the mass of ice in which it was first seen, since the days of Noah. If this was not the case, how shall we account for the fact that the species is now extinct? Besides this animal could not now live in the place where the other skeletons are deposited, if indeed it ever did live there. My opinion is that it ranged not farther northward than fifty or fifty-five degrees. Indeed the inclination of the earth's axis, at the time of the flood, would have destroyed it in that region, in the same way as it destroyed the mastodon; and it is to this, as well as the flood, we attribute the extinction of the species.

But the geologist has met with objections to his argument of a partial deluge, equally as formidable as those he brings forward to overthrow the opposite theory. But his sagacity however seems quite adequate to the occasion; for as the learned are rather disposed to forbear meddling to any great extent with his eager pursuits, the little read are sufficiently plastered to act as partial judges. If the deluge was confined to such a limited space, why did God send to Noah, to be taken into the ark, "every bird of every sort," seven pairs of each kind of fowl that inhabited that region that was to be deluged, and that were to be found in no other inhabited land? Even had the raven and the dove been the only winged animals taken into the ark, I would consider that the flood could not be limited within the bound of the three eastern continents; for these birds are found in almost every country in the world except in the frigid zones. Mr. Miller, however,

has invented a reply, for it is only an invention, and claims respect only for its genius,—a reply, we say, by showing that each certain country has its own raven and its own dove,—a reply as unsatisfactory as it is unfounded, for no one that has studied anything of natural history would be willing to acknowledge—peculiar geologists of course in particular excluded—that each of these varieties had a distinct origin, or even that they could not live in an adjacent region. Now if the deluge was as limited as geologists are wont to make it appear, it is most certainly a query that the raven and the dove returned to the ark, and the latter after it had been a whole day upon the wing; when, if we are to follow Miller, the prince of geologists, the place where the ark then was, as it had already rested, is “immediately on the western edge of this great hollow,” or, in other words, at the very edge of unsubmerged land. A mystery indeed! but even allowing that the ark rested upon the mountain selected by Sir Walter Raleigh,—a selection as odd as unimportant,—a mountain which lies within *this great hollow*, the distance is even then insufficient to justify Mr. Miller’s conclusion. But if the deluge was so very limited, what necessity was there for Noah to build an ark at all? Geologists could not say that he was a native of that particular region, and therefore could not migrate; and certainly it would have been as easy for the old gentleman and his family to travel even five hundred miles,—a distance vastly greater than such a case would have required,—as to build an ark, and work his passage after all. God could have directed him to a place of safety, as well as he directed Lot or Abraham to leave his native country; and the same power that guided the animals to Noah, could as easily lead them to a quarter not deluged (as they say), when they would perhaps have performed no greater journey than did they to

reach the ark. We could not suppose that the change in the climate would have destroyed them, for there must have been a great contrast—greater than now, and too great to be credited—between the temperature of those countries, if it was greater than that between the temperature of the level country and the summits of “the mountains of Ararat.” In short, this theory of the deluge requires a curious hypothesis,—that all the animals within the great hollow had no representatives beyond it, for if they had, what pure need of taking them into the ark? and let me remark, that had Noah taken only of those species of animals that were peculiar to Mr. Miller’s great hollow, he would have found that his ark had cost him a great deal of unnecessary labor. But here, as a natural consequence, the geologist has been at work. He found it would not do to put the deluge in a cavity without taking a piece off the ark, and accordingly he has labored hard to do so; but without commenting upon his success, permit me to remark that if he will only measure it with Noah’s rule, he will find it sufficiently large to accommodate the animal species of the three old continents.

It has been asked by some, as, for instance, the learned biblical commentator, old Matthew Poole, as quoted by Miller, “where was the need of overwhelming those regions where there were no human beings?” This interrogation has been used very freely—being from the pen of a scholar who lived before the budding of geology—by those on the partial side of the question, and amounts to about as much as to ask, why God rendered the vale of Siddim unfruitful, and destroyed the animals therein, when his particular object was only to destroy the wicked inhabitants of “the five cities of the plain;” or to enquire why God has scattered the Jews among all nations when it was their ancestors that excited his anger.

We however reply, that it was because he had a reason. If we are to believe the Bible, we are also to believe that the earth was *cursed* by the flood (see Gen. 8 : 21), and that the effects of that curse, like Noah's curse pronounced upon Canaan, would ever after continue, as it reduced its strength and fertility. God saw that the productions of the earth before the flood were so abundant and nutritious that men had sufficient leisure to ever indulge in sin,—probably in public gatherings,—and to be ever contemplating upon amusing crimes,—a fact to which we may in a great measure attribute the corrupted state of the antediluvians. Hence we believe, to decrease the fruitfulness of the earth, was one if not the principal reason why God so widely extended the deluge. But if America was not deluged, says one, how was it cursed? The reason is apparent. If we look to the chief and the most baneful effect of that cataclysm, there is no necessity even to reply. It was, however, by the inclination of the earth's axis; and as far as natural means are concerned,—which God generally employs to complete his designs,—it seems evident that it would require a force sufficient to, at all events, deluge the three eastern continents to produce such a phenomenon.

The deluge was certainly a great calamity, and produced a wonderful change in the primeval order of things; indeed the whole terraqueous globe then underwent a mighty revolution. We therefore cannot fall in with the doctrine of the geologist, that the deluge of Noah was similar to, and no more remarkable, as far as the constitution of the earth is involved, than the great convulsions that have in the gone-by ages taken place upon the surface of our planet. The difference is this: the latter were dispensations of Providence; the former, though blended with mercy, was a dispensation of vengeance. We do not however wish to convey the idea

that the deluge occasioned such great changes as is generally—with other whims among the grandfather class of readers—believed, that, for instance, the land and water were reversed or exchanged, but we hold to what appears to be the real scriptural and scientific truth. Many have thought that the land at the time of the flood was all united into one great continent, and that afterwards, in the days of Peleg, the continent of America and the numerous islands of the ocean were moved off from the main body, and in this way they account for their being inhabited. This they get from Gen. 10:25, where the reason is assigned for the name of Peleg, “for in his days was the earth divided;” but a political and not a physical division is here intended. The deluge nevertheless produced a change equally remarkable, nay vastly more so. All the changes that have ever taken place upon our earth since her becoming a planet, sink into insignificance in comparison with this, and there were evidently remarkable ones too. Even within the historical period of man, as has been already noticed, great changes in the earth’s surface have taken place. Mountains have arisen from plains and valleys, towering their rocky summits to the skies, while marine mountains have been heaved from the bed of the ocean, whose tops we now denominate islands; and it is remarkable that traces of dried-up rivers are to be met with in nearly all countries; but there are few instances of new ones springing into existence. The redoubted plains of Troy can be only with difficulty recognised, as the rivers mentioned by Homer, whose descriptive topography is not doubted, either cannot be found, or are at present some insignificant streams that fall far below the description of that poet. The river Dnieper in Russia is gradually drying up, and the waters of the Nile are sensibly diminishing.

The Baltic, is on the decline ; and the Adriatic received its name from the town Adria, now eighteen miles from the shore, but which was once a flourishing sea-port. North America is sensibly draining ; its rivers are slowly wearing away the rock, and occupying a lower bed. All these phenomena are due either to the elevation of the land or the subsidence of the ocean ; and we have good reason to believe that it is owing in some instances to the former cause. We are informed by Humboldt that on the banks of the river Orinoco in South America, a number of hieroglyphical figures are sculptured on the face of precipices, at a height which could now be reached only by means of extraordinary high scaffolding. If one asks the natives how these figures can have been cut, says this writer, they answer, laughing,—as if it were a fact of which a white man alone can be ignorant,—“ that in the days of the great waters, their fathers went in canoes at that height.” But all these fluctuations in the earth’s crust, great and extensive as they may have been, are only miniature changes in comparison to those brought about by the deluge of Noah, particularly the inclination of the earth’s axis ; and while we hold to this fact, which I consider beyond question, we can regard no partial deluge of the geologist a sister event. This once cheerful and happy abode no longer reflects its original beauties and perfections, since a change has been prematurely written not only upon the blooming features of creation, but relatively across the glowing countenance of the sun in the firmament. Cheerful summer now never stands before us with a bundle of roses in her bosom, without we see gradually rising above the horizon in the distance the boisterous head of winter with his weather-beaten cheeks, and his icy hair. But the same God that brought upon our earth such a deluge on account of sin, which forced upon us

the changing seasons, has written down his promise that there never shall be another,—not a partial deluge, as some have supposed, some of which have happened since the making of that promise, but a deluge, to use the words of Colenso, “such as the Bible manifestly speaks of.” For geologists to identify the deluge of Noah with their geological ones, is no more Christian than the assertion of Buffon, that the Hebrew and Grecian deluges were the same. In the year A. D. 1524, some of the states of Europe being alarmed by the prediction that another general deluge would occur, forgetting the promise of God, made preparations for the calamity, and arks were everywhere built, but the season happened to be a fine and dry one.

In concluding my remarks, let me exhort the reader to above all things believe the Bible, and never to allow his mind to be too much taken up with the writings even of great men when they interfere with the teachings of the Sacred Record, or tend to cast a shade upon the doctrine it unfolds; and I must say that geologists in particular—I say in particular because they are a body, though I accord with the general plan of their science—have in respect to the deluge thrown no little barrier in the way of the divinity student. The opinions they entertain we would willingly receive, were they consistent in the face of revelation; but until they or Colenso, or some other wit, can provide us with a better guide than the Book of Centuries,—the Bible,—I think we shall still continue with the same views; we are willing to risk the result: still if I have advanced anything more than the truth, I have done so innocently in endeavoring to give the Bible its rights, and hope therefore if in error to be forgiven.

APPENDIX.

A BRIEF VIEW OF COLENZO'S ARGUMENTS—HIS PRINCIPAL OBJECTIONS EXPLODED.

The harshness of my expressions with reference to Dr. Colenso's scepticism in the face of the Scriptures, may appear somewhat offensive to the reader; but to in some measure justify our statements, we will notice some of his glaring inconsistencies at the very root of his arguments.

We are happy to say that the flames which have been kindled by the pen of the Bishop of Natal, instead of consuming the Pentateuch, as he intended, have only brightened, in the eyes of the ungodly, the armament of our holy Christianity. We can therefore consider his enthusiasm in this direction but a kindling of the fire referred to by the prophet (Isa. 9:18), *the fire of sin*. No sooner had Satan succeeded in lighting his first fagot in Eden, than God told our first parents how to put it out; and we are thankful that all such brands have an extinguisher. As the Evil One required human agency in the first place to ignite the world, so we find him in the nineteenth century employing the same means. Reader, remember that an empty profession serves only as a dusting-pan for Satan to carry his coals in to spread his fire into the Church of Christ!

Among the many antagonists who came out in the defensive against the Colensonian invasion, there are none who have played so conspicuous a part as the Jews. Indeed if there were any people in the world who might be supposed to be able to overthrow the Bible, that people would be the Jews, for they know more about the Hebrew Scriptures than all the rest of the world put together. Nay, we see the venerable old Hebrew climbing the rocky heights of Sinai, and taking from the hand of Jehovah the lamp that lights our world; and we see now the eager though scattered remnants of that same people stepping forward, when the light becomes somewhat obscured, to brush from it the dust of centuries. They removed the specks from Voltaire's eyes, and no doubt by this time have picked the most of them from Colenso's.

On comparing the results of our own researches and the writings of several distinguished persons with Colenso's statements, and in particular the reply of the Rev. Charles Freshman, late Rabbi of the Jewish Synagogue at Quebec, but at present German Wesleyan Minister at Hamilton, we note the following:

Objection.—Colenso seizes this passage, Gen. 46:12, feeling "certain that the writer here means to say that Hezron and Hamul were born in the land of Canaan, and were among the seventy persons (including Jacob himself and Joseph and his two sons) who came into Egypt with Jacob." "And the sons of Judah: Er and Onan, and Shelah and Pharez and Zarah; but Er and Onan died in the land of Canaan. And the sons of Pharez were Hezron and Hamul."

Reply.—Colenso has here conjured up a difficulty, but which is a difficulty only to himself. One of his "plain English scholars" could

tell him that the verb "were," which is in our English translation corresponding to the original, only indicates that Hezron and Hamul were born long before this verse was written, without any reference whatever to the land of Canaan.

Objection.—In chap. 4, of his Part I, the Bishop sees a difficulty "in the size of the court of the Tabernacle compared with the number of the congregation." He makes out from a number of passages that the expressions "the assembly," "the whole assembly," "all the congregation," mean the whole body of the people. See Ex. 12:16; 16:2, 7; Num. 1:18; 10:3, 4; 14:5; 15:36; 16:47; Lev. 26:14; Isa. 8:5.

Now as the text says "at the door of the congregation," the people must have come within the court. But the Bishop, after measuring the Tabernacle, (18 feet by 54), observes that the able-bodied men alone (above 600,000) would have formed a line from the whole end of the Tabernacle reaching to a distance of nearly twenty miles. Indeed he finds that the court itself would not when thronged contain more than 5,000 persons.

Reply.—It is remarkable that his Jehovistic writer was such a genius as to impose upon the people his insertions in the Elohist documents, and yet on his own authority assert such abominable falsehoods as the Doctor here makes out. This looks like the sun bathing in muddy water. But we reply that the above expressions do not mean *all the people*, but their representatives. See Ex. 4:29; Ex. 3:16-18. Compare Ex. 4:30, 31, with Ex. 4:29; also Ex. 19:7, 8; Judges 10:8. See Josh. 23:2. Again Deu. 29:10, with vs. 2-10, and a host of other passages.

On page 81 of his Part I, the Bishop cavils at the following passage:

"And afterward he read all the words of the law, the blessings and the cursings, according to all that is written in the book of the law." Josh. 8:34.

The difficulty is, how could Joshua make all the congregation hear his words; besides he remarks "the day would not have sufficed in reading all the words of the law, especially after he had been engaged on the very same day in writing a copy of the Law of Moses upon the stones set up in Mount Ebal."

Reply.—Had this been an algebraic or geometrical problem, Colenso would certainly have thought and written less clumsily. Here again his "plain English scholar" might have been serviceable, for certainly it must be a stupid Englishman indeed that would not observe the utter impracticability of Joshua's writing "the five books" upon stone, as *his* statements evidently imply; and the Bible does not say he did so, but only "a copy of the law," meaning of course "the words of the law," "the ten commandments," which Joshua read with the blessings and cursings (in Deu. 27:28) to the people; and this he did through the Levites, as did Ezra. Compare Neh. 8, vs. 3, 4, 7, 9, with ch. 9:3, 4, 5. We add also, that when his lordship says that Joshua wrote a copy of the law of Moses "on the very same day," he says what he or any one else never read in Scripture.

Objection.—In Part I, chap. 6, Colenso quotes this passage: "And the skin of the bullock and all his flesh, with his head, and with his legs,

and his inwards and his dung, even the whole bullock shall he carry forth without the camp unto a clean place, where the ashes are poured out, and burn him on the wood with fire. Where the ashes are poured out, there shall he be burnt." Lev. 4:11, 12.

The objection is, how the priest could do all this himself, carry the refuse of the sacrifice a distance of three quarters of a mile, and fetch wood and water for all purposes, if indeed such supplies of wood and water could have been found at all in the wilderness.

Reply.—We remark that the priest did not perform these services alone, but was assisted by the Levites, as is proved from Num. 3:6, 7. And Colenso's wilderness is remarkably different from the one he seems to refer to, where Moses kept the flock of Jethro, and saw the burning bush (Ex. 3:2, 3); and we have sufficient proof that this wilderness was far more fruitful than now. This was the opinion of Burchardt, who was on the spot; and yet he says that "when about a day's journey from the southeast of Sinai, we came to a thick wood of tamarisks, and found a number of camels which pastured there."

Objection.—In Part I, chap. 9, the Bishop quotes this passage: "The children of Israel went up harnessed out of the land of Egypt." Ex. 13:18.

The Bishop tries to prove here that the original word "chamushim" signifies "armed," and we admit that it may mean so without creating any conflict whatever in the text. But he continues: "It is however inconceivable that those down-trodden, oppressed people should have been allowed by Pharaoh to possess arms so as to turn out at a moment's notice 600,000 armed men."

But we ask the Bishop to read vs. 33, 35, 36 (ch. 12), and he will see no *allowing* in the matter, as the Egyptians were terror-stricken. And if they asked (not borrowed) of the Egyptians at all, for what would they be more likely to ask than arms, when they knew they would require them; and it must be remembered that "a mixed multitude went up also with them," (verse 38), who might have provided arms: besides, the Levites who were exempt from slavery might also have provided arms. But it reads "The children of Israel went up harnessed *out of the land of Egypt*," which might be considered to imply, when they left the Egyptian shores, and, if so, they had plenty of arms, if we are to credit Josephus, Colenso's own authority; for he says the Hebrews gathered the weapons of the drowned Egyptians who were carried upon the shore by the current of the sea. Antiq., ch. 16, sec. 6. But allowing that this was not intended, it would be well for Colenso to remember that only a small body of them may have been armed, and not 600,000, as he tries to show from Num. 1:3, "when they were numbered under Sinai," for this was after the transaction related by Josephus, and besides they had fought their first battle with Amalek, when they might have taken the armor of the slain. Indeed Josephus declares this. Antiq., b. 3, ch. 2, sec. 5.

But Dr. Adam Clarke interprets the word which we have rendered "harnessed," to imply that the Israelites marched in order as an army, which was the idea of the translators when they rendered it "by five in a rank;" and I would choose Clarke's interpretation as soon as I

would Colenso's. Josephus gives the same feature when he says that Moses first "sorted the people into tribes," to keep them together.

Objection.—The Bishop very confidently enquires: "What did they eat the next day when they crossed the Red Sea? What on the next three days when they marched through the wilderness of Shur, and found no water? Ex. 15:22."

From Colenso's asking these questions, I am led to believe that the fit for a critical examination of the *Pentateuch* must have come upon him in a hurry, nay before he had ever properly read his Bible. Our reply however is not that they ate the dead Egyptians thrown upon the shore, but what the Bible says they ate. "And they baked unleavened cakes of the dough which they brought forth out of Egypt, for it was not leavened; because they were thrust out of Egypt, and could not tarry, neither had they prepared for themselves any victual." Ex. 16:39; see also verse 34.

Objection.—"The people, we are told," we find him saying, "were supplied with manna. But there was no miraculous provision of food for the herds and flocks. They were left to gather substance as they could in that inhospitable wilderness." He then goes on with a great rigmarole in trying to show the possibility "of such a multitude of cattle finding any means of support for forty years, under these circumstances."

Reply.—The simple reply we make is, that the Israelites were led by "a cloud by day, and a pillar of fire by night," and therefore that God would not lead them directly or indirectly into the sterile tracts continually, but circuitous through the most fruitful paths. Josephus plainly says that this was the case. This was the principal office of "the pillar." It is noticeable also that the manna fell in great abundance—more than the people required—indeed more than double as much, for they gathered double the amount on the sixth day, Ex. 16:5-22; "and when the sun waxed hot, it melted." Ex. 16:21. And for what purpose was this? and why forbidden to gather more than an omer for each man? We say with Rashi that "the ungathered manna melted and became brooks of water," enough to make the vegetation more luxuriant, and to supply the cattle (the word *cattle* in Scripture means sheep and goats, as well as horned cattle. See Gen. 30:32.) So Josephus: "It also supplied the want of other sorts of food to those that fed on it." Antiq., b. 3, ch. 1, sec. 6.

Objection.—The Bishop dives into another difficulty in assuming that the different sacrifices were attended to in the wilderness. He is therefore at a loss to discover how the Israelites could provide the different birds for sacrifice. His lordship labors very zealously to prove that such sacrifices were offered during the sojourn of forty years, but after wandering over a wide field, winds up without any positive proof that such was the case.

Reply.—If circumcision was not observed, why should we suppose they observed sacrifices? It is an established fact that no regular sacrifices were observed in the wilderness—not indeed till they came into the land of Canaan. (Num. 15:2, 28:2.)

Objection.—The following is the most perplexing difficulty which Colenso has summoned:

In Part II, chap. viii, he remarks "In the story of the Exodus," we read as follows:

And God spake unto Moses, and said unto him, I am Jehovah, and I appeared unto Abraham, unto Isaac, and unto Jacob, by the name of God Almighty (El Shaddai); but by my name Jehovah was I not known to them, and I have also established my covenant with them to give them the land of Canaan, the land of their pilgrimage, wherein they were strangers. And I have also heard the groanings of the children of Israel whom the Egyptians keep in bondage; and I have remembered my covenant. Wherefore say unto the children, I am Jehovah, and I will bring you out from under the burdens of the Egyptians, and I will rid you out of their bondage, and I will redeem you with a stretched-out arm and with great judgment; and I will take you to me for a people, and I will be to you a God; and ye shall know that I am Jehovah your God, which bringeth you out from under the burdens of the Egyptians. And I will bring you in unto the land concerning the which I did swear to give it to Abraham, to Isaac, and to Jacob; and I will give it to you for an heritage. I am Jehovah. Ex. 6:2-8.

Now Colenso, in looking over the original of the earlier books, finds that that very name Jehovah, which is said now to be first made known (to Moses), was used by the first people that lived—by those very persons who in the above text are said not to have known God by that name. See Gen. 14:22; 26:22; 28:16. It was likewise known to Eve, Gen. 4:1; to Lamech, 5:29; Noah, 9:26; Sarah, 16:2; Rebekah, 27:7; Leah, 29:35; Rachel, 30:24; Laban, 24:31; Bethuel, 24:50. It was known even to heathens. See Gen. 26:28.

Of course Colenso uses this to prove his well known theory of his writers having in different ages composed the Pentateuch—the Elohist and the Jehovist.

Reply.—All that is necessary to say here is that this strongest point Colenso holds has a foundation supported by a hair. After perusing the opinions of the leading commentators upon the question, I rest satisfied that the words should be read *interrogatively* "for the negative particle, *lo, not*," says Clarke, "has this power often in Hebrew." "I appeared unto Abraham, Isaac and Jacob, by the name of God Almighty, and by my name Jehovah was I not also made known unto them?" As much as if He had said, Though my name Jehovah was known simply to them, yet the majestic virtues which that name implies shall now be revealed in their fulness for the emancipation of my people. In short we have unconquerable evidence that the name Jehovah was used in very early times, as we find the names of persons and places compounded with it as "Judah," Gen. 29:29; Reuben, 29:32; Simeon, 33; Joseph, Job, Gen. 46:13; Jochebed, Joshua, Mitzpah, Gen. 30:49. Also we read "And Moses built an altar and called the name of it Jehovah-nissi," "And Abraham called the name of that place Jehovah-jireh," and several other instances, as Azariah, I Chron. 2:8; Abiah, 2:24; Jonathan, 2:32, &c.

These passages, with the others we noticed in the chapter on the Deluge, are the most powerful Colenso sets forth in his two books in condemning the Pentateuch, and we leave it before the world to judge

whether he is correct or not. For my part I see no alternative ; and if his lordship will do as he states in Part II, p. 36, he will acknowledge his error. His words are "If the arguments here stated can be fairly set aside, most gladly will I acknowledge my fault before the Church, and submit to the just consequences of my acts."

All we need say upon this subject is, if we allow that Colenso is correct, there is no such thing as Christianity in the sense of the term, as his arguments, when carried out fully, make Christ nothing more nor less than an impostor, for the same Scripture which the Saviour cites, as is seen throughout the greater part of the gospels, is pronounced by Colenso as untrue. For my part I prefer reasoning with the celebrated Dr. Young. About a fortnight before his last illness he was visited by his intimate friend Dr. Cotton. They had been delivering, towards the end of their discourse, their sentiments upon "Newton's Dissertation on the Prophecies," when Dr. Young thus closed the conference :—"My friend there are two considerations upon which my faith in Christ is built as upon a rock ; the fall of man, the redemption of man, and the resurrection of man. These three cardinal articles of our religion are such as human ingenuity could never have invented ; therefore they must be divine. The other argument is this,—If the prophecies have been fulfilled, of which there is abundant demonstration, the Scriptures must be the word of God ; and if the Scriptures are the word of God, Christianity must be true."

Finally, we know by an experimental surety, the truth of Rom. 8 : 16 ; and if this is true, Christianity is true ; and if Christianity is true, Jesus was Christ, the son of God ; and if Jesus was Christ, the New Testament was "inspired ;" and if so, the Pentateuch is the word of God. This is a simple, yet infallible reason ; and should the most overwhelming convincing and decisive argument be adduced in array against the Scriptures that would argumentatively silence the voice of every theologian under the heavens, as long as I there find it recorded that Christ was bruised for our iniquities, as was foretold centuries before by the prophets, I will still continue to believe it. The Scriptures have the seal attached to them—the seal of the Holy Spirit, and when that same seal is stamped upon our hearts, we know what fits the impression. Reader ! believe the Bible. He that believeth shall be saved ; he that believeth not shall be damned.

In Part II, ch. xi., Colenso makes a mistake when he quotes Kuenon, who says that "the word *Eloha* is not used in Hebrew, but in Arabic."

We refer the Bishop, says Freshman, to Deu. 32 : 17. They sacrificed unto devils, not to God. Here he will find the word *Eloha*. Also to Daniel, 11 : 38. "But in his estate shall he honor the God of forces." Here *Eloha* again occurs. And here, continues Freshman, it must be observed that this is the pure Hebrew, and not the Syriac-Chaldee, where *Eloha* occurs very frequently.

On comparing this with what we said before, the doctrine of a plurality in the Divine nature (and mayhap of a Trinity) is evident.

INFIDEL OBJECTIONS ARE FOUNDED UPON MISTRANSLATIONS OR IGNORANCE OF THE HEBREW TEXT.

Bishop Colenso, Dr. Freshman says, might as well put forth the following twenty-eight objections, usually urged by infidels as an excuse for their rejection of the Bible as a revelation from God.

1st. It is said that when Abraham saw that three men stood by him he ran to meet them. (Gen. 18 : 2.) Now, we would ask, if they stood by him, where did Abraham run to ?

2nd. We gather from many commentaries, written by eminent men, on Gen. 4 : 6, 7, that God promised to reward Cain for his wickedness, and to punish Abel for his goodness, by making the former ruler of the latter ; now, we would ask, what man would say to his servant, If you rebel against me, and obey not my commands, I shall make you for your disobedience ruler over my household ?

3rd. How is it that God could raise an exceeding great army from dry bones, (Ezek. 37 : 10,) and yet could not help Judah to drive out the inhabitants of the valley, because they had chariots of iron ? Judg. 1 : 19.

4th. "And God did tempt Abraham" Gen. 22 : 1. If we are tempted to do evil, why should we be punished for the commission of it ?

5th. "Let it be according unto your words, he with whom it is found shall be my servant, and ye shall be blameless." Gen. 44 : 10. How could it be according to their words to make him a servant, when in the ninth verse it appears that Joseph's brethren had agreed that he should die with whom the cup was found ? And again : how could it be according to their words that they should be blameless when in the same verse they said they would be bondsmen, not blameless ?

6th. "The wicked borroweth and payeth not again," (a decisive mark of the ungodly) Ps. 37 : 21. How can this be reconciled with Exodus 12 : 35, where we find the Israelites were commanded to borrow from the Egyptians, and no mention made of their having ever repaid them at any subsequent period ?

7th. "And till Moses had done speaking with them he put a veil on his face. And the children of Israel saw that Moses' face had shone." Ex. 34 : 33, 35. Aaron and all the children of Israel were afraid of the shining of Moses' face, but he called unto them, and gave them all the commandments that the Lord hath spoken with him on Mount Sinai." Now, we ask, how could they be afraid of the shining of Moses' face when he spoke to them veiled ?

8th. "A meat offering mingled with oil and dry," Lev. 7 : 10. How could it have been dry if it were mingled with oil ?

9th. In Isaiah 49 : 25, it is written, "For I will contend with him that contendeth with thee." How do you reconcile this declaration with the command of Moses in Deuteronomy 25 : 9, where a woman is commanded to spit in the face of an Israelite, an indignity which we would not suffer to be practised upon our youngest child ?

10th. How is it that in Exodus 12 : 15, we read, "Seven days shall ye eat unleavened bread," while in Deut. 16 : 8, it is written "Six days thou shalt eat unleavened bread" ?

11th. How is that in Leviticus 19 : 34, a command is given to "love a stranger as one's self;" whilst in Deut. 23 : 20 it is written, "Unto a

stranger thou mayest lend upon usury ; but unto thy brother thou shalt not lend upon usury " ?

12th. How can we reconcile Jephtha's sacrificing the life of his innocent child (Judges 11 : 35) with Genesis 9 : 6, where we read, "Whoso sheddeth man's blood by man shall his blood be shed" ?

13th. How is it in Hosea 1 : 2, we read that God commanded Hosea to take a wife of whoredoms, but in Deut. 22 : 20, 21, Moses commands that a person guilty of whoredom should be stoned to death ?

14th. How can we reconcile the conditional language of Jacob in Gen. 28 : 20, 21, "If the Lord will be with me, and give me bread to eat, etc., then shall the Lord be my God," with Deut. 6 : 5, "And thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy might" ?

15th. How can we reconcile the command in Deut. 6 : 5, with the language used by David in Psalm 98 : 1, "I love the Lord because he hath heard my voice and my supplications" ?

16th. Job 6 : 12, 13. "Is my flesh of brass ? Is not my help in me ?" If Job's help was in him, why complain of not being able to bear the burden put upon him ?

17th. "They reap every one his corn in the field." If they reaped their own corn, why did Job find fault with them, comparing them to wild asses, rising betimes for a prey ?

18th. Job 41 : 11. "Who hath prevented me to repay him." Here the word *prevent* stands for *hinder*. Let us now turn to Ps. 21 : 3. "For thou preventest him with the blessings of goodness, thou settest a crown of pure gold on his head." In one case it is evident that *prevent* means to hinder, or obstruct, whilst in the other it has a different meaning ; and the Bible being indiscriminately circulated, how is the illiterate man to distinguish ?

19th. How can we reconcile David's saying in Psalm 53 : 3, "There is none that doeth good, no not one ;" and again in Psalm 104 : 35, "Let the sinners be consumed out of the earth," (thereby cursing the whole human race, for "none is good, no not one,") with I Chron. 21 : 17, where he says, "Is it not I that have sinned, but as for these sheep, what have they done" ?

20th. How can we reconcile with common sense the question put to Job in 39 : 20, "Canst thou make him (a horse) afraid" ? We all know that a child could very easily frighten a horse ; how can we, therefore, or how can any one, suppose that God would ask Job if it was possible for him to do what a child would find no difficulty whatever in doing ?

21st. Again : how can what we find Ps. 101 : 3, be reconciled with what is written in Ecclesiastes 7 : 17 ? In the former passage it is said "I will set no wicked thing before mine eyes, I hate the works of them that turn aside, it shall not cleave to me." Whereas in the latter we learn that we may be somewhat wicked, for it is said, "Be not overmuch wicked" ?

22nd. Proverbs 26 : 4 : 5, "Answer not a fool according to his folly." "Answer a fool according to his folly." Do not these two verses contradict one another ?

23rd. How can we account for the improbabilities and apparent con-

traditions in Gen. 31 : 46, "And Jacob said unto his brethren, Gather stones?" We all know that Jacob had but one brother, namely, Esau, and that at the time he said "gather stones," his brother was far away from him in the land of Seir, the country of Edom.

24th. In Hosea 10 : 1, we read "Israel is an empty vine, he bringeth forth fruit unto himself." Is not this a palpable contradiction; if he was an empty vine, how could he bring forth fruit? and if he brought forth fruit, how could he have been an empty vine?

25th. In Ex. 33 : 3, we read, "I will not go up in the midst of thee, for thou art a stiffnecked people, lest I consume thee." And in the fifth verse of the same chapter, "Ye are a stiffnecked people, I will come up into the midst of thee and consume thee." Now, how can these two verses be reconciled either with each other or with what we find in Malachi 3 : 6, "I am the Lord, I change not"?

26th. In Jeremiah 25 : 1, we read, "In the fourth year of Jehoiakim, King of Judah," that was the first year of King Nebuchadnezzar, while in the book of Daniel, 1st chap. verses 1, 2, it is said, "In the third year of Jehoiakim, King Nebuchadnezzar came into Jerusalem, and took Jehoiakim prisoner." Do these two chapters agree? Again, in II Kings, 24, we read, that, "After a reign of three years, Jehoiakim rebelled against King Nebuchadnezzar, and was destroyed;" and if so, how comes it that in the 36th chapter of 2nd Chron., 5th verse, we are told that Jehoiakim reigned eleven years in Jerusalem.

27th. 1st Sam. 28 : 12. "And when the woman saw Samuel, she cried with a loud voice, and the woman spake to Saul, saying, Why hast thou deceived me? for thou art Saul." How is it that the witch did not know Saul until she saw Samuel coming up? Again, if she really brought up Samuel, why did she not know him? for she screamed "I saw gods," and above all, why was she so much afraid of them when she was accustomed to bring up spirits?

28th. Esther 7 : 5. "Then the King Abasuerus answered and said unto Esther the queen, who is he, and where is he, that durst presume in his heart to do so?" What made the king express such astonishment when he himself had given authority to Haman to destroy the Israelites? And further, why did Haman exhibit such fear when it was only necessary for him to remind the king that it was done by his permission and approbation?

All these objections can easily be answered by taking the original instead of the English version, and so they are answered. (See Mykur Hayem, p. 370.) And so also the most of the Bishop's objections fall to nought, by depending upon the original, and relying upon the ancient commentators.

To give the reader an idea of the difference between the original and the present English version, we quote the following passages.

Genesis 18 : 2.

ENGLISH.

"And he lift up his eyes and looked, and lo! three men stood by him, and when he saw them, he ran to meet them."

HEBREW.

"And he lift up his eyes and saw, and behold three men stood opposite him, and when he perceived them, he ran to meet them."

Genesis 4 : 6, 7.

ENGLISH.

"And the Lord said unto Cain, Why is thy countenance fallen? if thou doest well, shalt thou not be accepted? but if thou doest not well, sin lieth at the door. And unto thee shall be his desire, and thou shalt rule over him."

HEBREW.

"And the Lord said unto Cain, Why is thy countenance fallen? if thou doest well, thy face shall be lifted up; but if thou doest not well, thy sin shall watch thee at the door of judgment, and unto thee shall be his (Satan's) desire to cast thee down, but thou canst rule over him."

Exodus 12 : 35.

"And they borrowed of the Egyptians jewels," &c.

"And *till* Moses had done speaking with them, he put a veil on his face."

"And they asked of the Egyptians jewels," &c.

"*When* Moses had done speaking with them, he then put a veil upon his face."

Genesis 22 : 1.

"And it came to pass, God did tempt Abraham."

"And it came to pass, God did prove Abraham." Com. 1 Sam. 17:39; Eccles. 2:1; Dan. 1:12.

Genesis 44 : 10.

"And he said, Now also let it be according unto your words: he with whom it is found shall be my servant; and ye shall be blameless."

"And he said, It ought to be as ye say, nevertheless he with whom it is found shall be my servant; and ye shall be innocent."

Leviticus 7 : 13.

"Besides the cakes, he shall offer for his offering leavened bread."

"Besides the cakes of leavened bread, he shall offer his offering."

Leviticus 7 : 10.

"And every meat offering, mingled with oil, and dry."

"And every meat offering, mingled with oil, or dry."

Deuteronomy 25 : 9.

"Then shall his brother's wife come unto him in the presence of the elders, and loose his shoe from off his foot, and spit in his face, and shall answer and say, So shall it be done unto that man that will not build up his brother's house."

"Then shall his brother's wife come unto him in the presence of the elders, and loose his shoe from off his foot, and *spit out before him, or in his presence*, and shall answer and say, So shall it be done unto the man that would not build up his brother's house."

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